

Harnessing social action to support older people

Evaluating the Reducing Winter Pressures Fund

Research report

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Volunteering has long been a feature of both health and social care services. The past decade has seen an increase in efforts by government and others to promote volunteering across all public services. In August 2014, the Cabinet Office, NHS England, Monitor, the NHS Trust Development Authority and the Association of Directors of Adult Social Services launched the £2 million Reducing Winter Pressures Fund. Seven projects in England were selected to receive funding based on proposals to use volunteers (a form of 'social action') to offer support to older people, improve their wellbeing and increase their capacity to live independently. This report is the outcome of an independent evaluation of the progress made by the projects. In it we describe how the projects used volunteers to support older people in a range of ways and the challenges they faced in setting up services in the community and in hospitals. We analyse the impact of these projects on subsequent hospital use and report on the experience that older people, volunteers and NHS staff had with the projects. We also offer some learning both for the voluntary sector and for commissioners and NHS providers.

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Foreword: Nuffield Trust

If there has been one constant over the past five years, as the NHS has tried to work more closely with its partners in the face of rising demand and constrained funding, it is the need for building new relationships. This is hard work for clinicians, managers and commissioners. It is hard enough to build relationships between different NHS organisations – between general practice and hospitals, for example. It's harder still to do it across system boundaries between health and social care, or between health and the voluntary sector.

As Mark Fisher, Executive Director of the Office for Civil Society, points out on the next page, there is a huge reserve of 'people power' available to the NHS and social care if relationships can be made to work – an army considerably larger than the NHS workforce. While some NHS services (mental health and palliative care, for example) have long track records of drawing on the resources of volunteers to support patients directly, many parts of the NHS system, particularly the more clinically focused (and pressurised) parts of acute and primary care, have tended not to see volunteers as a crucial part of their workforce for a variety of reasons. One of those has been a lack of evidence about what value, if any, volunteering can bring beyond the 'nice to have' benefits of patient signposting, or tea and reassurance at the margins of clinical effort.

So we were delighted, in 2014, to have been selected to evaluate the seven local projects funded by the Reducing Winter Pressures Fund, which was led by the Cabinet Office. The evaluation was built in from the start, with the aim of generating evidence that would enable the scaling up of volunteer projects more widely across England. The projects all had in common a desire to support older people who had reached some kind of crossroads in their lives: a deterioration in their health, for example, that might put them at risk of a hospital admission, or those in an A&E department or on a hospital ward who are uncertain about their ability to cope independently in their own homes.

We have learned through this evaluation that small voluntary sector organisations are capable of gearing up and working with some of the most pressurised parts of the NHS. They learned how to navigate complex organisations in hospitals, and built relationships with multiple health and care providers in the community, while at the same time recruiting and maintaining a corps of volunteers of different ages and backgrounds.

We also learned that projects of this kind are not magic bullets for reducing emergency admissions or lengths of stay. We have evaluated other projects, including NHS-led ones, that have also not been magic bullets: reducing pressures on hospitals is a complex task that will require complex solutions from both within and without the NHS.

The one message from this evaluation I would like commissioners and other bodies in the statutory sector to take away is this: the 'people power' of volunteering is there, and it can be harnessed, to the benefit of older people, their families and staff.

Nigel Edwards, Chief Executive, Nuffield Trust

Foreword: Office for Civil Society

The challenge of involving our communities, through social action, in health and social care has never been stronger or more necessary. As reflected in chapter 2 of the NHS *Five Year Forward View*, community volunteering has a key role to play in the future of health and care services. The opportunities created by voluntary sector organisations, working closely with commissioners and health and social care providers, has resulted in wider acceptance of the role that local volunteering can and does play in tackling the pressures on health and social care. Across all the sites involved in this programme, NHS staff and others demonstrated a willingness to be part of involving volunteers. Indeed, we know from across our programmes supporting social action in health that frontline staff remain receptive and appreciative of the valuable contribution volunteers can and do make.

This new evidence helps us to again demonstrate how social action can make a real difference, by successfully harnessing local people. We often talk about the significant and largely untapped resource available within our communities. We know that there are already around 3 million people doing some form of volunteering in health and social care. Knowing the number of people who are already volunteering right across our health and social care system didn't stop me being taken by surprise (albeit pleasantly) by the results of NatCen's recent British Social Attitudes survey. An analysis of this survey by The King's Fund projected that around 24 million people, if asked, would consider volunteering in health and social care. We could add real value by unlocking this huge reserve of people power.

In setting this programme up with colleagues from NHS England, the Department of Health and working with local commissioners, we set ourselves some tough questions. We took this as an opportunity to see if we could help save money. But saving money was neither the only measure nor the end goal. The question we asked was this: what could be achieved, working with the voluntary sector, using different approaches, in different locations, over different time frames? The conclusion is that social action in health and care adds value. But value is only sustainable when the systemic problems that impact on health and social care begin to be tackled using systemic solutions. To achieve these systemic solutions, we need to work in partnership to ensure that social action and volunteering continue to be embedded at the outset in system change and transformation programmes like the NHS Vanguards, the emergent NHS footprint Sustainability and Transformation Plans, as well as the work of NICE, the CQC and others.

A key lesson learned was that all of the grantees delivered services that were valued by volunteers, statutory sector staff and users. The programme also generated lessons about how social action projects, when working in partnership with local health and social care providers, can gear up to work effectively with even the most pressured parts of the NHS.

Our partners – Age UK, the Royal Voluntary Service, British Red Cross, and the leading regional charity Westbank Community Health and Care in Devon – demonstrated a willingness to use their expertise, generate resources and investment from beyond the NHS, and deliver much-needed practical support. What we now need to see is an equal measure of willingness from others to fully involve volunteers in delivering better health and wellbeing outcomes for all.

**Mark Fisher, Executive Director, Office for Civil Society,
Department for Culture, Media and Sport**

Executive summary

This report presents the findings of an evaluation of seven social action projects funded by the Cabinet Office, NHS England, Monitor, the NHS Trust Development Authority and the Association of Directors of Adult Social Services. Funding was provided by the Office for Civil Society, which was part of the Cabinet Office for the duration of the fund (but has since moved to the Department for Culture, Media and Sport). The fund, which was called Reducing Winter Pressures, aimed to scale up and test projects that used volunteers to support older people to stay well, manage health conditions or recover after illness, and thereby reduce pressure on hospitals. Allowance for a full evaluation of the projects was included in the fund in order to increase the evidence base for interventions of this kind.

Seven projects were evaluated, comprising a range of local and national charities across England. The projects aimed to have a measurable impact on one or more aspects of hospital use, including reduced emergency admissions, readmissions, delayed discharge and attendance at A&E, and improved patient experience.

The seven projects were run by a range of local and national charities across England: Age UK Cornwall, British Red Cross (BRC) Derbyshire, Westbank Community Health and Care (based near Exeter), Royal Voluntary Service (RVS) Leicestershire, Age UK Leeds with British Red Cross and Carers Leeds, Age UK Oxfordshire and Age UK South Lakeland.

The projects were part of a broader initiative, led by the Cabinet Office, to promote 'social action', which includes the giving of time and money in the community for the service of others.

Approach

The Nuffield Trust was commissioned to evaluate the projects, which began in July 2014. We used a mixed-methods approach, with 63 semi-structured interviews with staff, volunteers and local stakeholders, in addition to an analysis of changes in hospital activity for the recipients of services, using a matched control group drawn from English hospital data. We also used administrative data supplied by the projects to the funders.

The interviews were used to assess the process of setting up and rolling out the projects, and the impact on users and carers. The analysis of hospital data was used to assess the potential impact on costs and usage of hospital services, including A&E attendance, emergency admissions, length of stay, outpatient and planned inpatient use. Due to the absence of consistent and comparable patient experience data, the impact on users' experience was assessed through the interviews and observational visits.

Our analysis of hospital data focussed on referrals to the projects during the nine months from October 2014 to June 2015, and some of our key findings relate only to referrals during the first six months of the schemes (to March 2015). As such, our findings are limited to the early months of the extended project schemes – though these may have evolved substantially over the course of the entire funding period.

Findings

Scope of the projects

The projects fell into the following three broad categories:

- **Community-based support** – projects provided assistance for vulnerable older people still living at home, considered to be at risk of a hospital admission in the future.
- **Discharge from hospital** – projects worked with hospital wards to identify people in need of support on discharge. They were helped with their return home, and varying lengths of ongoing support were provided to help regain independence.
- **A&E to home** – one project worked with A&E hospital staff to identify people attending A&E departments who might not have a medical need to remain in hospital. The project supported them to return home safely instead of being admitted to a ward. They were then followed up for a limited period to help regain independence.

All projects combined direct, practical support with indirect support such as onward referrals to other statutory and voluntary sector services, and linking with other services and sources of informal help in the community. Direct support included help with shopping, picking up prescriptions, providing transport (for example to visit a spouse or relative in hospital), finding and taking a person to lunch clubs or other social activities, and helping people to fill out forms for statutory financial help (most commonly attendance allowance) and to arrange for adaptations fitted in the home, whether paid for privately or accessed through social services.

We found that the type and intensity of services offered to older people varied considerably, both within and between project sites, depending on the design and prior experience of the projects. Services also varied because what was offered was based on assessments of individuals' needs, and on the availability of other local sources of help and support.

The average age of services users was 80, but the average age varied between projects – a reflection of underlying demographics. As part of our analysis, the hospital records of service users were analysed (anonymously): the overwhelming majority (94%) had at least one hospital contact in the year prior to referral into the projects, and 71% had one or more long-term condition recorded.

Impact on users and the wider health and care system

The overriding picture from the interviews with staff, volunteers and NHS colleagues was of services that were considered to be of considerable benefit to people and their families, but also to NHS and other statutory sector staff.

- **These services helped older people with unmet needs.** The additional time available to volunteers to spend with the older person, together with their good knowledge of local services, enabled a fuller understanding of the person's needs and the types of support required. The volunteers and staff from the voluntary sector were reported to have built trust with service users, fostering more open conversations and making people aware of their needs. Where people fell short of the thresholds for formal care, the low-level social action support helped fill gaps in the services provided.

- **These services helped to reduce feelings of isolation.** While practical tasks were important in their own right, the presence of a volunteer, without the time constraints of a health or care professional, reduced feelings of isolation, helped the older person connect with other services and people locally, and put them 'on the radar' for statutory services.
- **These services could increase productivity and satisfaction of health and social care staff.** The services were seen as having freed up time for professionals to focus on primary tasks, while project staff and volunteers were able to take the responsibility for arranging and coordinating the services that patients needed. The presence of project staff on wards made referrals to them much easier, and they were reported by NHS staff as having helped to speed up discharge. In addition, the community-based services improved the knowledge of NHS staff about the range of voluntary services available in the community, and improved the confidence of health professionals in using them.
- **Families and carers benefited.** These services helped families to support and care for their relatives. Family carers were also given respite, whether directly (by taking them on trips) or indirectly (by allowing them to take a break).
- **This was a rewarding experience for volunteers.** Projects recruited volunteers from across the age ranges. Volunteering was seen as a valuable experience for students or those pursuing a career in the health and social care sector. The training added to the experience, and the charity's 'brand' was also a draw. Other volunteers had personal motives for volunteering, including using skills acquired earlier in life and 'giving something back'.

The picture from the quantitative analysis of hospital activity after referral to the schemes was, however, mixed. In general we did not see a reduction in hospital use among users of these services when compared to a closely matched control group. The exception to this was a group referred to the A&E-based scheme whose admissions to inpatient beds appeared to be relatively low, but even here this was only apparent in the short term.

Our analysis of those referred to **community-based schemes** in three areas between October 2014 and March 2015 (N = 1,076) found that in the nine months after referral the social action service users had significantly higher levels of hospital use (of all types, except for numbers of elective admissions) than the matched control group. These increases were equivalent to approximately one extra A&E visit or emergency admission for every five people. Total hospital costs in these nine months were higher by £751 per person for the social action service users compared to matched controls.

For the group that received **discharge from hospital** services in five areas, we firstly assessed the possible effects of the schemes on the referral hospital admission spell itself. Our analysis group consisted of those referred to the schemes between October 2014 and the end of June 2015 (N = 1,814). We did not find evidence that the schemes helped people to be discharged earlier: the social action service recipients had a statistically significantly longer average length of stay than a similar matched control group (longer by 2.8 days on average).

Secondly, in the nine months after referral (for referrals between October 2014 and March 2015; N = 1,016) the **discharge from hospital** social action service users had

significantly greater average post-referral emergency hospital admissions than did the matched controls (equivalent to approximately one additional admission for every four people). Meanwhile elective admissions were lower for this group compared to controls (equivalent to one fewer admission for every four people). There were no significant differences between the two groups in outpatient attendances or in A&E visits, nor were there differences in total hospital costs over the nine month follow-up period.

For the **A&E-based** scheme, we found that those referred between October 2014 and the end of June 2015 (N = 1,007) were less likely to be admitted directly from A&E than the matched control group (56.0% were admitted compared to 65.2% in the matched control group).

However, on following the **A&E group** for nine months after referral (for referrals between October 2014 and March 2015; N = 739), the social action and matched control groups had very similar patterns of admissions, outpatient attendances and A&E visits. Total hospital costs in the nine months after referral were also similar in the two groups.

Overall, we found no evidence of more than short-term reductions in emergency admissions, and no evidence of reductions in hospital costs following the social action referrals.

Discussion

The Reducing Winter Pressures Fund aimed to scale up and test volunteer-based services to see if support could be put in place to improve the lives of older people at risk of hospital admission and thereby reduce pressure on the NHS. The services were funded against a backdrop of steadily increasing emergency admissions to hospital and reduced performance against the four-hour A&E target. Expectations among the projects and commissioners were high that the services would result in reduced use of hospital services, over a short period of time. All the projects aimed to encourage and support older people to be as independent as possible while being careful not to duplicate the efforts of statutory services.

The evaluation resulted in a mixed set of findings. From our interviews, there was evidence of services that had made an impact by providing practical help, reassurance and connection with other services that could reduce isolation and enable independence. But the analysis of hospital activity data in the months that followed people's referral into the projects did not suggest that these schemes affected the use of NHS services in the way that was assumed, with no evidence of a reduction in emergency hospital admissions, or in costs of hospital care following referral to the social action projects. The one exception was the project based in an A&E department, which revealed a smaller number of admissions in the short run. Below we explore possible reasons for this.

Programme design

All projects had to overcome challenges to scale up services in the three months to October 2014. The hospital-based services needed to build relationships and trust with NHS staff, from senior managers to frontline staff, and negotiate access to NHS IT systems and wards. Projects also had to understand often complicated discharge processes, and make sure that their services could fit into existing routines. Community-based services needed to publicise their services, and build relationships

with GPs and other primary care clinicians, social services and other voluntary sector partners who were in regular contact with older people.

Project staff identified the challenge of targeting the services at the right users: those who could benefit from this kind of support in a way that could make a lasting impact on their lives, and not intervene too late, when a person's needs had become too complex. All projects had to find ways to identify service users, and the referral pathways could be complex, particularly for the community-based interventions. These could include referrals from primary care, social care, other voluntary sector organisations, as well as word of mouth.

Evaluation methodology

To select controls we relied on the best nationally available data: Hospital Episode Statistics. We selected controls with similar disease and hospital contact histories, but the efficacy of the control may have been affected by systematic differences between the groups in terms of other factors potentially connected to future use of hospital services, including housing status, social support networks and self-assessed health, as well as the levels of use of other care services (primary care, social care). Such factors were not captured in the available data.

Timing may also have been a factor. The projects had to put in place an expanded set of services in a very short period of time, and we noted that some modified their services as they gained more experience, and referring partners became more aware of the services. We carried out our main analyses only for those referred in the first six months of the schemes, to allow a long enough period of follow-up time to measure any post-referral effect (nine months). It is possible that our focus on the first six months of the schemes may mean that our conclusions do not necessarily reflect the services offered by the end of the funding period. It is also possible that a nine-month follow-up period may have been insufficient time in which to show measurable effects on hospital care. Some of the help being offered – particularly for the community-based schemes (getting access to attendance allowance and other welfare benefits, for example) suggest that any benefits may well take a longer period of time to feed through.

But it is also possible that longer time periods would not have changed our results fundamentally. The results from this analysis of hospital data are broadly consistent with previous evaluations, including our own, which have used similarly robust methods. It is worth noting that our results were largely consistent across the project areas: the three community-based schemes all showed higher costs with respect to controls after referral, while the five hospital discharge schemes showed no difference with respect to controls. The selection of control areas was noted as a potential limitation of our approach (because of uncertainty about services in those areas, and even in terms of differences in coding of hospital events) – but the consistency of the results goes some way to tempering concerns about how appropriate individual areas were for use as controls.

It is possible that these projects uncovered unmet need, which was then reflected in more intensive use of hospital services in the months after referral. The projects focused on encouraging individuals to articulate their needs and accept help, and this may well have been accompanied by an increased focus on their physical needs, once they were then known to the wider health and care system.

Our quantitative analyses were limited to nationally available hospital data sets. Future projects of this kind would benefit from a broader set of metrics to fully capture their value, for example by using measures that describe improvements to older people's wellbeing and the perceptions of staff in statutory services. It may also be the case that services of these kinds may reduce pressure on primary or social care services. These cannot currently be measured using national data sets.

Lessons arising from this evaluation

For the voluntary sector

- When scaling up volunteer use, recruitment and training are time-intensive and volunteer numbers need to be regularly refreshed. Volunteers need to be carefully matched to tasks, depending on age and time available.
- Services need to be established around a reliable, well-trained body of volunteers who can be matched to tasks in a way that both meets their reasons for volunteering and is of value to the programme. They also have to be underpinned by good recruitment and retention of high-quality staff who are adept at navigating the NHS and social care system.
- Establishing schemes of this kind requires persistence and astute leadership to build strong project teams and good relations with statutory sector partners – both senior managers and front-line staff.
- Those leading voluntary sector projects need to be ready to work with their NHS and social care counterparts, in order to overcome any concerns about increased workload, reliability and attitudes to risk in relation to vulnerable patients, or concerns about job roles that might lie behind initial resistance. Regular feedback to professionals on the outcomes of referred patients seems to be a good strategy to assist with this.

For commissioners and NHS providers

- If well run, these projects can free up time for NHS and social care staff to focus on their core activities, and, in theory, be more productive. They can also support vulnerable patients, thereby improving patient satisfaction. They can add additional dimensions of support to primary care, and community-based health and care staff, increasing their capacity to respond to the needs of older people in a holistic way.
- Projects such as these can increase the knowledge of NHS staff, especially GPs and hospital clinicians, about the range of voluntary sector services in their community. A single point of contact can increase the confidence of clinicians in referring.
- Future metrics will need to be broader than the use of statutory services and potential savings, to systematically capture the value to older people and their families, as well as benefits for NHS and social care staff and other parts of the system – for example admissions to long-term care, and workload in primary and community care.
- Above all, these sorts of initiatives need to be given time to succeed: short-term funding increases the prospect of failure and reinforces perceptions in the statutory sector that the voluntary sector is unreliable.

1. Introduction

In 2014, the Cabinet Office, NHS England, Monitor, the NHS Trust Development Authority and the Association of Directors of Adult Social Services provided £2 million in funding for seven local projects across England to support older people to stay healthy and alleviate pressure on hospital services.

The objective of the fund, formally known as the Reducing Winter Pressures Fund, was to 'scale up and robustly test' a number of projects that used social action to 'help older people stay well, manage their conditions or recover from illness or injury, reducing pressure on hospitals' (Cabinet Office, 2014) over the winter of 2014/15. The projects were chosen to receive funding following a competitive tender. To be eligible, projects had to be based in England, have volunteers as a core part of their services and involve scaling up an existing service or project.

All projects aimed to have a measurable impact on patient experience and one or more of the following aspects of hospital use:

- Accident and Emergency (A&E) attendances
- delayed discharge
- emergency admissions
- readmissions.

Projects were also selected on the strength of their integration with key local health and social care bodies, their plans for sustainability beyond the funding period, and clarity about how they would target their services and measure the impact.

The seven projects selected were:

- Age UK Cornwall
- Age UK Leeds with British Red Cross (BRC) and Carers Leeds¹
- Age UK Oxfordshire
- Age UK South Lakeland
- BRC in Derbyshire
- Royal Voluntary Service (RVS) in Leicestershire
- Westbank Community Health and Care (based near Exeter).

The projects were initially funded from July 2014 to March 2015. However, funding was subsequently extended to June 2015 for six projects and to March 2016 for a subset of five projects.

¹ This project is referred to throughout this report as the 'Leeds service'.

Full details of the selected projects are set out in Chapter 3, but they fell into two broad groups:

- community-based schemes that aimed to keep older people living independently and safely in their own homes
- voluntary sector-led, hospital-based schemes to help people leaving hospital and avoiding admission to hospital.

Some projects included a mixture of both elements.

At the time of designing and launching the fund, the Cabinet Office and partners noted that small-scale, innovative projects of this nature existed across England, but robust evidence about their impact and effectiveness was lacking. Evaluation was therefore built in from the projects' inception, and the Cabinet Office was looking for proof of the projects' effectiveness through:

- quantifiable evidence on the impact of the projects on key outcome measures (preferably by linking data from the projects to existing health and social care datasets)
- the process of delivery, including an assessment of what worked well/less well
- value for money, in terms of impact on health and social care budgets.

After a procurement process, the Nuffield Trust was appointed to evaluate the projects. The finally agreed scope of the evaluation comprised:

- an assessment of progress in implementation and delivery
- an assessment of the impact of projects on hospital use (through quantitative analysis of inpatient and outpatient admissions, A&E attendance, length of stay and hospital costs) – for patient experience, we agreed to provide advice to projects as to the best methods of assessing changes in patient experience, as national data were not available
- an assessment of the sustainability and scalability of such projects and keys to success, particularly in the light of current policy interest in expanding these types of schemes.

Full details of the methods are set out in Chapter 2.

Background

Volunteering has long been a feature of both health and social care services. An estimated 14.2 million people in the UK formally volunteered at least once a month in 2014/15, according to the National Council for Voluntary Organisations (NCVO, 2016). Of these, 16 per cent had given unpaid help to 'health, disability and welfare' organisations, and 12 per cent to organisations that supported older people. In 2013, The King's Fund estimated that around three million people regularly volunteered in health and social care, including 78,000 people in hospitals across England (Galea and others, 2013; Naylor and others, 2013).

The past decade has seen an increase in efforts by government to promote volunteering as part of a broader set of activities known as 'social action', which includes the 'giving of time, the giving of money, community action and simple, everyday neighbourly

acts' in the service of others (Cabinet Office, 2015b, p.5). The Coalition Government (2010–15) incorporated volunteering and social action into its vision for sustaining public services, under the banner of a 'Big Society' (Cabinet Office, 2010). In 2013, the Centre for Social Action was set up, led by the Cabinet Office. By 2015, £36 million had been invested in over 200 projects (Cabinet Office, 2015a).

Volunteer effort within health and social care has also been promoted by government, from the 'strategic vision' set out in 2011 (Department of Health, 2011) to the blueprint for future health and social care services set out in the *Five Year Forward View*, in which volunteers are described as 'crucial' (NHS England, 2014; see Box 1.1).

Box 1.1: Volunteering in the NHS Five Year Forward View

'Encouraging community volunteering. Volunteers are crucial in both health and social care. Three million volunteers already make a critical contribution to the provision of health and social care in England; for example, the Health Champions programme of trained volunteers that work across the NHS to improve its reach and effectiveness. [...] The NHS can go further, accrediting volunteers and devising ways to help them become part of the extended NHS family – not as substitutes for but as partners with our skilled employed staff. For example, more than 1,000 'community first responders' have been recruited by Yorkshire Ambulance in more rural areas and trained in basic life support. New roles which have been proposed could include family and carer liaison, educating people in the management of long-term conditions and helping with vaccination programmes. We also intend to work with carers organisations to support new volunteer programmes that could provide emergency help when carers themselves face a crisis of some kind, as well as better matching volunteers to the roles where they can add most value.'

Source: NHS England, 2014, pp. 13–14.

The NHS context for 'winter pressures' projects

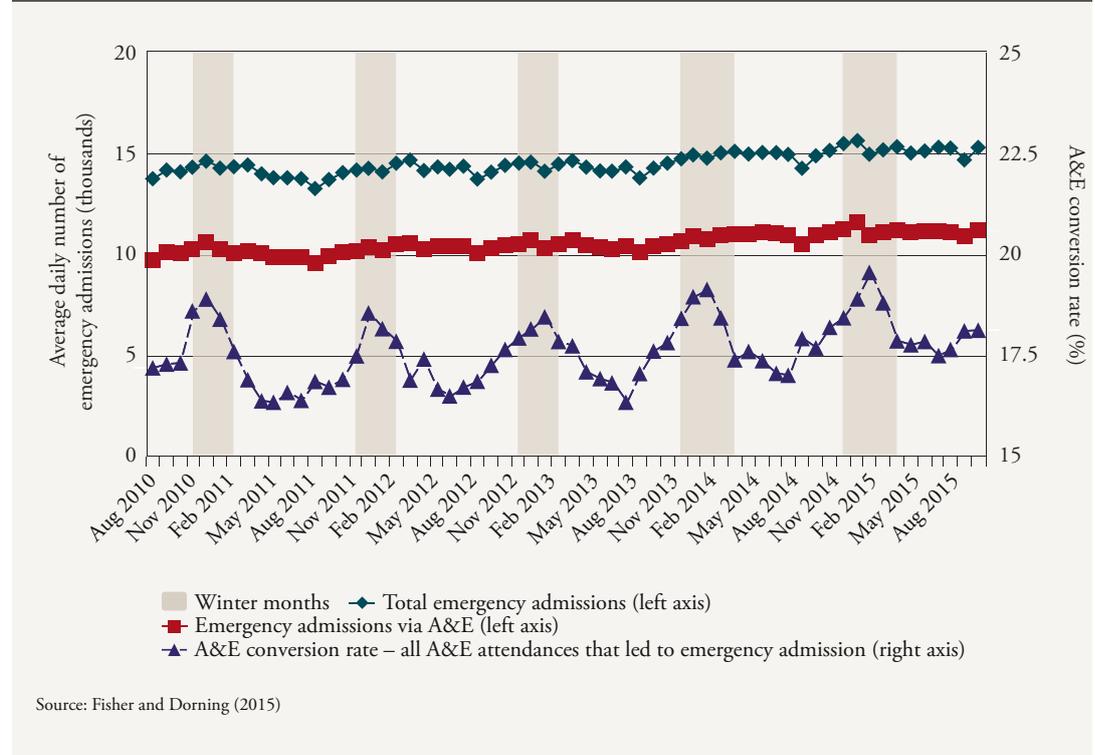
The projects evaluated in this study were intended to address pressures on hospitals. In April 2014, when the Cabinet Office launched the call for projects, the most visible manifestation of those pressures in the English NHS was performance against the four-hour A&E waiting times target – the target time within which 95 per cent of patients were supposed to have been treated in A&E departments. Performance against the target had begun to deteriorate in September 2012, achievement of the target in December 2012 was 92 per cent and, by April 2013, it had fallen to just 90 per cent – the lowest level since the target was introduced in January 2004 (Blunt, 2014).

The steady rise in the rate of attendances at A&E departments since 2011 is another important contextual factor, with older age groups more likely to attend A&E and stay for longer than their younger counterparts (Fisher and Dorning, 2015). Analysis of hospital data suggests that increases in A&E attendances among older age groups are broadly in line with population growth (Blunt, 2014). Attendances among older age groups are more likely to peak in December each year (Fisher and Dorning, 2015).

Admissions to hospital after an A&E attendance have also risen since 2011, and the rate at which A&E attendances 'convert' into hospital stays tends to peak each year over the winter months (between November and March) (Fisher and Dorning, 2015;

see Figure 1.1). Reducing emergency admissions (particularly among older age groups) has been a complex and enduring policy challenge for the NHS (National Audit Office, 2013).

Figure 1.1: Average daily number of emergency admissions and A&E conversion rate, by month, August 2010 to August 2015



Older people are more likely to experience delays in discharge from hospital because of the need to put care and support in place after a hospital stay. Official NHS England data that measure these 'delayed transfers of care' (DTOC) – by taking a snapshot of the numbers of people waiting in a hospital bed despite being medically fit for discharge – show that, from 2012, the number of patients classified as delayed (medically fit for discharge but unable to leave) had risen slowly, and by 2015 had exceeded the levels in 2010 (when data collection first started) (Fisher and Dorning, 2015; see Figure 1.2).

Figure 1.2: Snapshot of the number of patients delayed by the responsible organisation each month, August 2010 to August 2015

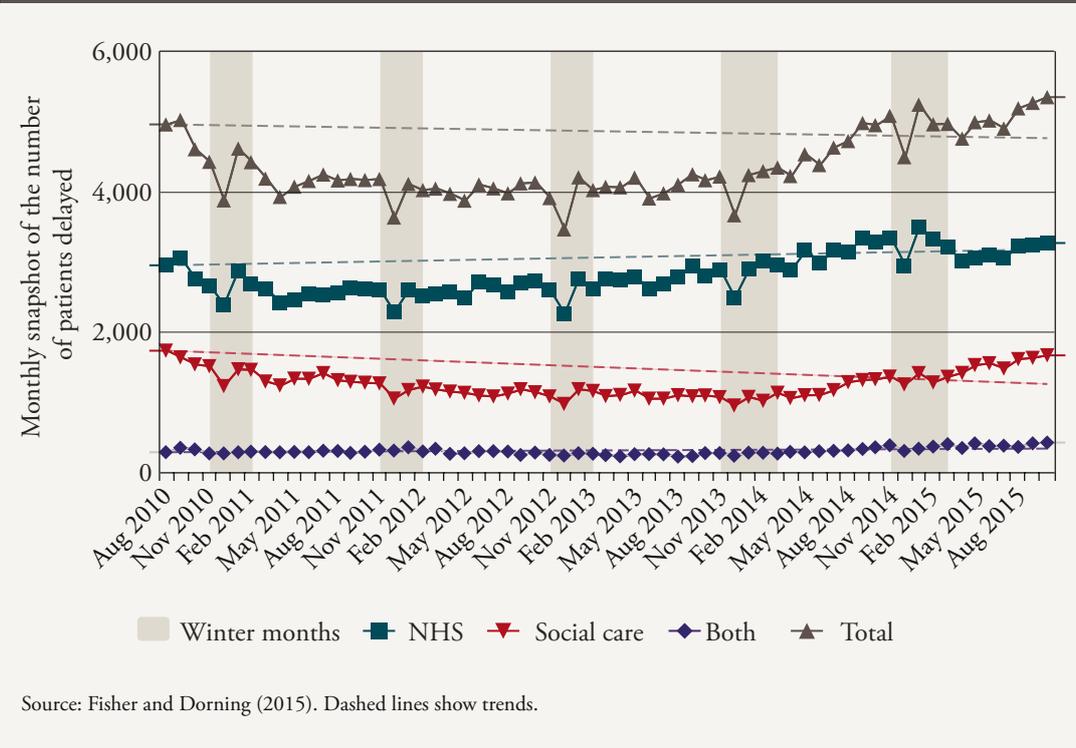


Figure 1.2 shows that the NHS was recorded as being responsible for more delays than social care over the five-year period, but this same period had also seen intense pressure on publicly funded adult social care budgets. In the period preceding these projects (2010/11 to 2012/13), the amount spent on social care for older adults fell by 8 per cent in real terms, with the number of older adults receiving state-funded care falling by 300,000 (National Audit Office, 2014).

Potential benefits of social action and volunteering

In 2014, the National Audit Office concluded that the combination of '[r]ising needs, reducing local authority spending, and reductions in benefits may be putting unsustainable pressure on informal carers and acute health services' (National Audit Office, 2014, p. 8). It was into this environment that the seven 'winter pressures' projects were launched in the summer of 2014.

Underpinning them was a somewhat partial evidence base. There is a growing body of evidence on the positive impacts of volunteering on volunteers themselves. For example, in a review of 87 articles, Casiday and others (2008, p.3) found that: 'Volunteering was shown to decrease mortality and to improve self-rated health, mental health, life satisfaction, the ability to carry out activities of daily living without functional impairment, social support and interaction, healthy behaviours and the ability to cope with one's own illness.'

There is less evidence on how volunteering impacts on service users. The review by Casiday and others (2008) noted some limited evidence on selected outcomes such as:

- better mental health
- concordance with medical treatments
- improved disease management and acceptance
- increased self-esteem
- increased survival time for hospice patients
- the adoption of healthy behaviours.

A study of 13 different schemes for older people found that volunteers reported a wide variety of benefits to the people they served, themselves, their families and communities (Morrow-Howell and others, 2009). More recently, a review of the evidence base, commissioned by the Richmond Group of Charities, concluded that although there was evidence around the value added by charities, particularly in relation to health and wellbeing outcomes, there was a much weaker evidence base about the potential for cost savings and efficiencies (Bull and others, 2016).

There are very few studies that have analysed the impact of these sorts of volunteering services on people's use of hospitals, using any sort of control group. One study of the impact of a British Red Cross service (which used staff and volunteers) on hospital readmission rates found mixed results:

- higher emergency admissions in the intervention group within six months of receiving the service
- lower use of planned hospital care
- overall, neutral results in terms of hospital care costs (Georghiou and Steventon, 2014).

Results such as these need to be placed into a broader context: many kinds of interventions that employ clinical and other professional staff have frequently failed to make an impact on emergency admissions (and readmissions) to hospital. A systematic review published in 2012, which looked at the impact of a wide range of initiatives, including case management, telecare, specialist clinics and hospital-to-home schemes, found that the majority of them did not reduce unplanned admissions (Purdy and others, 2012).

Given the growing international interest in improving the management of care for people with long-term and/or multiple health problems (Nolte and McKee, 2008; Wagner and others, 1996), this is an evidence base that will – and needs to – evolve. As budgets for publicly funded health and social care come under increasing pressure, it is vital that the evidence about what works to improve care and reduce avoidable hospital use for this growing segment of the population is expanded. The Reducing Winter Pressures initiative was therefore timely – combining an interest in social action with an urgent need for health and care services to prevent or avoid crises for older people and the knock-on consequences for financially stretched health and care services.

The Reducing Winter Pressures Fund and evaluation

The Cabinet Office, NHS England, Monitor, the NHS Trust Development Authority and the Association of Directors of Adult Social Services launched the £2 million Reducing Winter Pressures Fund in August 2014, alongside a further £600,000 to projects using volunteers inside hospitals. Expectations were already high for what the initiatives would show. The-then Minister for Civil Society, Brooks Newmark, said: ‘[W]e believe that these projects will showcase the potential of social action to reduce hospital pressures and improve patient experience, and will be sustained into the long-term by local commissioners’ (Cabinet Office, 2014).

The Cabinet Office commissioned the Nuffield Trust to undertake an evaluation of the Reducing Winter Pressures programme. The following chapters outline the evaluation approach we took, our findings and our observations on the challenges of implementing and sustaining these winter pressures projects.

Note that, hereafter, the project run by Age UK Leeds, British Red Cross and Carers Leeds will be referred to throughout as the ‘Leeds service’.

2. Evaluation methods

The evaluation commenced in October 2014, and included quantitative and qualitative research components, as follows:

- an assessment of the success and sustainability of the schemes using semi-structured interviews with paid project staff, volunteers and stakeholders about their perceptions of the project implementation and potential learning points
- an analysis of changes in hospital activity for recipients of volunteer support using linked data to compare the hospital usage of project beneficiaries versus a matched control group
- brief descriptive analyses of the activity and costs of the schemes.

Evaluation of staff and user perceptions

Semi-structured interviews

In order to understand perceptions of the projects and the successes and challenges encountered with their implementation and delivery, we undertook a number of interviews. We gave the project manager of each of the funded projects a list of the types of people we were interested in interviewing about their experiences of working alongside, or as part of, the projects – commissioners, general practitioners (GPs), ward matrons and other key ward staff, members of the project staff and volunteers – and we asked them to suggest some contacts. Potential interviewees were provided with a participant information sheet so that they were aware of what taking part would involve and could make an informed decision as to whether to participate.

We conducted a total of 63 interviews between October 2014 and July 2015, either in person or on the telephone, across the seven project sites. We interviewed project staff (n = 27), volunteers (n = 12), commissioners (n = 8) and a range of statutory sector staff (n = 16).

Observations and site visits

We also conducted site visits to see the services at first hand. Service users as well as additional project staff and volunteers were interviewed informally on these occasions. Observations from the site visits are used in this report to provide additional context to the themes emerging from the interviews. As noted in Chapter 1, limitations in both resources and data meant that it was not possible to measure the impact of the projects on patient experience using the same methods as we used for hospital use.

Analysis of changes in hospital activity, and descriptive analyses of social action referral schemes

Our main analysis involved three key stages, as follows:

- **Data linkage of project referrals data to English national hospital data** – Hospital Episode Statistics (HES). This allowed us to identify (pseudonymously) all NHS hospital activity of people who had received a service from the projects,

from up to two years before they were referred. We were also able to follow their subsequent hospital activity to 31 December 2015.

- **Identification of ‘matched control’ individuals from the rest of the population of England.** Having identified all the people who had received a service from the projects, we were able to use the same hospital datasets to find another set of individuals from elsewhere in England who had a very similar set of characteristics. These characteristics included:

- age
- sex
- deprivation (area of residence)
- history of hospital use in the two years prior to referral
- disease history
- predicted risk of future emergency admission, or other relevant event.

This matched control group represented a group receiving ‘normal care’. In the absence of an intervention (in this case the social action referral), we would expect the two groups to have had the same (or at least a similar) prognosis in terms of hospital admissions and other contacts in the post-referral period.

- **Calculation of any differences in hospital activity post referral.** Once we had selected appropriate matched controls, we calculated post-referral differences in a number of hospital outcomes in the social action referrals versus the matched controls. These included:
- the numbers of emergency admissions and other hospital contacts (elective admissions, outpatient attendances and A&E visits) in the nine months following referral to the projects
- the length of stay of the initial referral spell, for the projects referring people in hospital inpatient admission wards
- A&E visits with no resulting admission to an inpatient ward (admission avoidance), for the projects referring people in an A&E department
- hospital costs of all of the above outcomes.

In reality, we identified a number of matched control groups, each focused on a different outcome or referral group. Further details on the methodology can be found in Chapter 5 and in Appendices A to C.

For analyses of and contextual information on the services provided as part of the social action schemes, we relied on two main sources of information:

- administrative pseudonymised person-level datasets collated by each of the project sites
- quarterly monitoring reports summarising progress, which the project sites provided to Social Investment Business on behalf of the Cabinet Office.

Our analytical approach centred on identifying (pseudonymously) people referred to the schemes within national hospital datasets, and then using those same datasets to find very closely matched individuals for use as controls. This is a powerful approach that we have used successfully in previous evaluations (Bardsley and others, 2013; Georgiou and Steventon, 2014), but it is important to bear in mind that it is not without its limitations.

For this evaluation study, these included the following:

- We selected control individuals from areas outside of those funded. We made efforts to select people from similar areas based on standard national datasets, which captured factors such as rurality, employment and so on – so, for example, Cambridge residents were used as matches for Oxford-resident service users. What these data do not capture are details about variations in local services, for example whether similar schemes were operating in other areas.
- Selecting from out of area also meant that there might have been differences in hospital data-coding practices between areas.
- We needed to allow a long-enough period after referral in which to follow service users and controls in their subsequent use of hospital services. This limited the period we could study (see the next section: ‘Period of analysis’).
- We selected control individuals from the only national dataset that was available: hospital data. We had no information about levels of personal or social deprivation. Our selected controls may have therefore been systematically different from the project service users in terms of these factors.
- We selected control individuals so that they were well matched with service users when all project sites were considered grouped together. The quality of matching will, in general, have been poorer for any individual subgroup (for example for each project site) and so the results of subgroup analyses need to be interpreted with care.

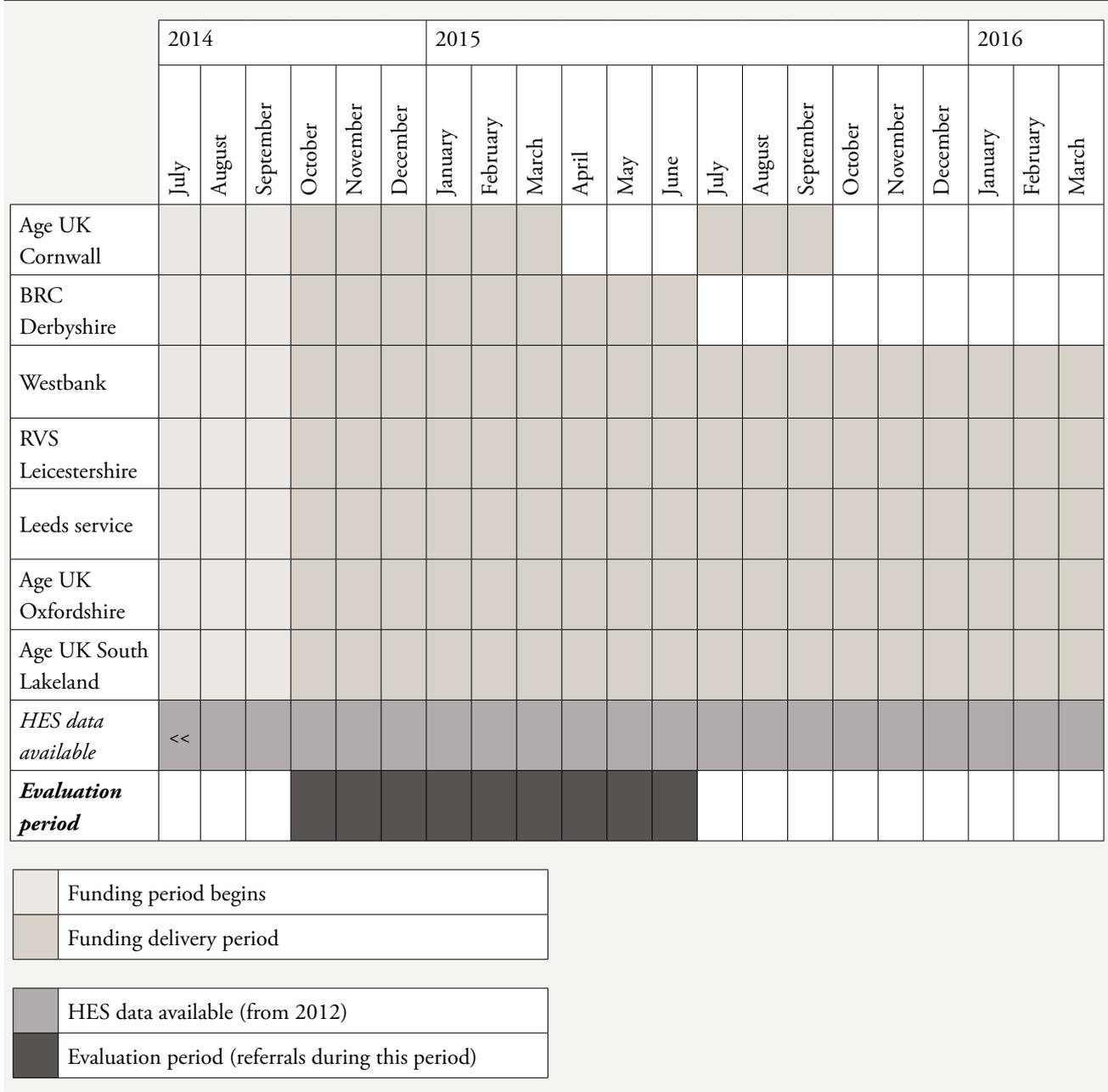
Where possible, we made efforts to control for these elements in our analyses. These are outlined in Chapter 5 and in Appendix B, while implications are examined in Chapter 7.

Period of analysis

All projects were initially funded from July 2014 to March 2015, with services expected to be up and running by October 2014. Two further extensions of funds were made available – initially for another three months to June 2015 (not awarded to Age UK Cornwall), and then for another nine months to March 2016 (not awarded to BRC Derbyshire, and awarded to Age UK Cornwall for only three months) (see Figure 2.1).

Our analysis focused on referrals to the projects during the nine months from October 2014 to June 2015, and some of our key findings relate only to referrals during the first six months of the schemes (to March 2015). As such, our findings are limited to the initial months of the extended project schemes – although these may have evolved substantially over the course of the entire funding period.

Figure 2.1: Period of projects' funding and period of evaluation of service user referrals, July 2014 to March 2016



3. What did the projects do?

In this chapter, we describe what the projects delivered and to whom. We first present an overview of the projects as a whole and then give more detailed information based on the different project types (community based, discharge from hospital and A&E admission avoidance). We conclude with some overall descriptions of costs to the schemes of providing these services alongside other insights about service users.

Overview of all the projects

Total numbers referred

A total of 7,062 people were referred to the projects between October 2014 and the end of June 2015, according to the projects' administrative datasets (see Table 3.1). The referrals handled by each project ranged from 2,531 (Leeds service²) to just under 500 (Age UK Cornwall and Westbank, Exeter). Note that there were 7,790 referrals in total, as a number of people were referred twice or more over the period in question.

Table 3.1: Number (and %) of people referred, and total number (and %) of referrals, October 2014 to end of June 2015

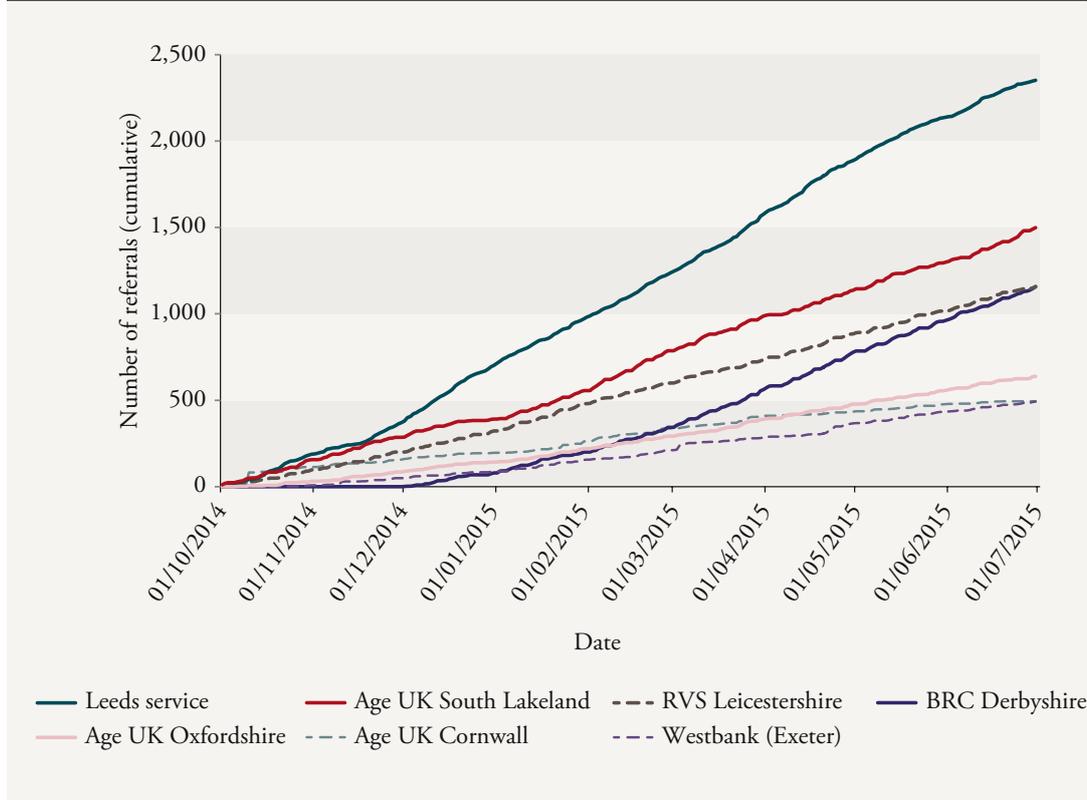
Project site	People referred		Total referrals	
	N	% of all	N	% of all
Age UK Cornwall	487	6.9%	494	6.3%
BRC Derbyshire	1,011	14.3%	1,159	14.9%
Westbank, Exeter	479	6.8%	493	6.3%
RVS Leicestershire	1,155	16.4%	1,156	14.8%
Leeds service	2,091	29.6%	2,351	30.2%
Age UK Oxfordshire	597	8.5%	638	8.2%
Age UK South Lakeland	1,242	17.6%	1,499	19.2%
All sites	7,062		7,790	

Source: Administrative datasets.

The number of referrals in each of the project sites grew steadily over the course of the nine-month period from October 2014 to June 2015 (see Figure 3.1). Several of the areas had a reduced rate of referrals between Christmas and New Year (Age UK Cornwall, Age UK Oxfordshire and Age UK South Lakeland). BRC Derbyshire started accepting referrals two months later than the other sites.

2 As noted on p. 22, this term is used throughout to refer to the project run by Age UK Leeds, British Red Cross and Carers Leeds.

Figure 3.1: Cumulative number of referrals, October 2014 to end of June 2015 (total number of referrals = 7,790), by project site



Total numbers of volunteers and staff recruited

Many of the projects continued to recruit volunteers into late 2015 and early 2016, but by June 2015 (the end of our evaluation period) a total of 381 volunteers had been recruited to work on the projects, alongside approximately 50 staff (see Table 3.2). Projects designed services with very different levels of volunteers at the outset, but some also struggled to recruit and retain volunteers for reasons that will be explored more fully in Chapter 6.

Table 3.2: Levels of recruitment of volunteers and staff for each project as of June 2015

Project site	Volunteers		Staff (full-time equivalent where known)	
	Planned to March 2015	Actual at June 2015	Planned to March 2015	Actual at June 2015
Age UK Cornwall	60	21	6	5
BRC Derbyshire	20	20	9	7
Westbank, Exeter	120	109	4	3.5
RVS Leicestershire	75	94	Not specified	7
Leeds service	150	45	9	9
Age UK Oxfordshire	38	38	9	9
Age UK South Lakeland	60	54	7.9	9
All sites	523	381	25.9	49.5

Source: Original project proposals and quarterly monitoring reports.

Table 3.3 presents information for four sites where we were able to examine the numbers of contacts made by staff members and volunteers. While all four sites made an average of three to four contacts per person as part of their service, documented volunteer contacts were relatively rare except in Westbank (which used its own volunteers for befriending, unlike some of the other services, which connected people with third-party befriending services).

Table 3.3: Average number of contacts with staff and volunteers in four project sites, October 2014 to June 2015

		Project site			
		Age UK Cornwall	BRC Derbyshire	Westbank, Exeter	Age UK Oxfordshire
Number of people referred		487	1,011	479	597
Number of people with recorded contacts		280	915	399	577
Average length of service period (number of days between first and last recorded contact)		40.6	23.1	31.7	30.0
Average number of contacts* per (contacted) person	with staff	3.58	3.84	1.92	2.93
	with volunteer	0.23	0.03	2.22	0.36

* To make data comparable between sites, a maximum of one contact was counted for each day per user, per staff/volunteer type.

Age and sex of service users

All the projects broadly targeted older people, but specific criteria for individual projects varied and included the presence of multiple long-term health conditions, an absence of social support and people who lived on their own. In terms of age ranges, across the projects the lower age limit target was 50 years old. However, the projects occasionally supported people who fell outside of their referral criteria.

From the data recorded by the projects, we found that the mean age of service users was 79.8 (see Table 3.4). A relatively small proportion (4.9 per cent) were aged under 60 while over a third (36.1 per cent) were aged 85 or over. Some were very old: 21 people were 100 years or older (not shown). Six out of every ten (60.9 per cent) of those referred were female.

There were variations across the projects. Westbank had the most distinctive pattern of service users with 53.4 per cent aged 85 or over (none were aged under 74). The mean age of Westbank service users was 85.1, and more than seven out of 10 (70.8 per cent) were female. South Lakeland had the youngest group of service recipients, with a mean age of 75.9.

Table 3.4: Age and gender of service users, by project site

Project site	Number of people	Mean age	Age range (minimum–maximum)	% aged under 60	% aged 85 and over	% female
Age UK Cornwall	487	80.1	32–99	6.4%	39.8%	65.3%
BRC Derbyshire	1,011	77.2	19–101	11.5%	33.7%	52.9%
Westbank, Exeter	479	85.1	74–102	0.0%	53.4%	70.8%
RVS Leicestershire	1,155	80.1	45–104	3.3%	36.1%	63.8%
Leeds service	2,091	81.3	32–103	1.7%	39.7%	61.8%
Age UK Oxfordshire	597	80.8	42– 03	3.2%	36.9%	59.8%
Age UK South Lakeland	1,242	75.9	46–104	8.3%	23.6%	58.3%
All sites	7,062	79.8	19–104	4.9%	36.1%	60.9%

Service users and hospital care

In order to evaluate the projects against their potential impact on hospital use (see Chapter 5), we linked information about service users (from the sites' administrative datasets) to English HES datasets. The linkage was carried out by the Health & Social Care Information Centre (HSCIC)³ using a methodology designed to preserve the service users' anonymity. This linkage process allowed us to examine service users' historic (pre-referral) hospital use (see Table 3.5).

³ The HSCIC is a non-departmental government body sponsored by the Department of Health. It was renamed NHS Digital in August 2016

Of the 7,062 people referred by the end of June 2015 6,273 (88.8 per cent) were successfully linked to HES (further information on this is available in Appendix A). Age UK Cornwall declined to be involved in data linkage via HSCIC, offering instead equivalent locally linked datasets derived from Secondary Uses Service (SUS) data.⁴ These were not received in time for our analysis, and so Age UK Cornwall was excluded from our final quantitative analysis.

The overwhelming majority of service users (93.9 per cent) had at least one recorded hospital contact in the year prior to referral (see Table 3.5). Over three-quarters (76.6 per cent) had had at least one inpatient admission, with over two-thirds (67.2 per cent) having had an *emergency* admission. Four-fifths (80.8 per cent) had had at least one outpatient attendance, and six out of ten (59.7 per cent) had made a visit to A&E. There were also differences by project site and service type in patterns of prior hospital use. We expand on these differences further in the section ‘Service users’ prior hospital use – differences by service type’, later in this chapter.

Table 3.5: Prior hospital activity in the 12 months before referral to the projects, by project site

Project site	N	All types		All inpatient admissions		Emergency inpatient admissions			Outpatient attendances		A&E visits	
		Any	Any	N per person	Mean bed days	Any	N per person	Mean bed days	Any	N per person	Any	N per person
BRC Derbyshire	960	97.1%	92.8%	2.86	21.3	84.5%	1.95	13.9	74.1%	3.96	14.5%*	0.28*
Westbank, Exeter	447	88.8%	63.8%	1.52	12.0	56.2%	0.95	10.0	77.6%	4.51	64.9%	1.28
RVS Leicestershire	1,127	99.6%	98.4%	3.02	25.4	92.2%	2.12	18.5	79.9%	4.30	81.5%	1.93
Leeds service	2,083	94.1%	75.2%	2.27	14.7	66.9%	1.65	13.7	86.3%	5.32	74.1%	2.28
Age UK Oxfordshire	560	94.8%	79.1%	2.13	23.5	73.0%	1.44	14.6	80.2%	4.82	69.8%	1.32
Age UK South Lakeland	1,096	86.2%	46.3%	1.24	6.8	28.7%	0.49	5.2	79.1%	5.06	42.5%	0.78
All sites	6,273	93.9%	76.6%	2.25	16.8	67.2%	1.51	12.9	80.8%	4.78	59.7%	1.49

* A&E visit numbers are artificially low for BRC Derbyshire. The pseudonymised person identifiers in A&E data from Chesterfield Royal Hospital did not link to other datasets. Figures are not included in the all-site A&E summary statistics.

Service users and health conditions

The linked hospital inpatient data contained records of primary and secondary diagnoses noted during any admission spell that individuals had had. Table 3.6 summarises the most prevalent diagnoses in the two years prior to referral. Hypertension, mental ill health and peripheral vascular disease were the most commonly recorded conditions; however, many other conditions were present in large numbers.

⁴ Secondary Uses Service (SUS) data are equivalent to HES data, as used by commissioners and providers of NHS-funded care.

Table 3.6: Health problems recorded in hospital data during the two years prior to referral

Most common diagnoses	All service users (N=6,273)
Hypertension	51.4%
Mental ill health	34.5%
Peripheral vascular disease	33.5%
Atrial fibrillation	24.8%
Ischaemic heart disease	22.1%
Fall	22.1%
Diabetes	19.6%
Chronic obstructive pulmonary disease	17.7%
Congestive heart failure	16.7%
Renal failure	15.5%
Cerebrovascular disease	15.0%
Angina	13.5%
Cancer	13.2%
Anaemia	13.0%
Respiratory infection	12.0%

Multiple conditions were also common (see Table 3.7): just over half of those referred had two or more long-term conditions; nearly one in ten had five or more long-term conditions.

Table 3.7: Multiple conditions recorded in hospital data during the two years prior to referral

Long-term conditions	All service users (N = 6,273)
Number per person	1.87
% with none	28.8%
% with 2 or more	50.9%
% with 5 or more	9.2%

Note: Long-term conditions include angina, asthma, cerebrovascular disease, COPD, congestive heart failure, connective tissue disease/rheumatoid arthritis, diabetes, hypertension, ischaemic heart disease, renal failure and sickle cell anaemia.

What service models did the projects use?

All the projects delivered a very broad range of services to support older people. These included a mixture of indirect support (with staff and volunteers being primarily

engaged in linking people with existing services) and direct support (in the form of practical help of some kind).

We have grouped the services into three broad models for the purposes of our analysis (see Box 3.1). Some projects focused on only one service model, whereas others used a combination of models (see Table 3.8).

Box 3.1: Overview of the three service models

Community-based support

Community-based support services aimed to assist people in the community. For example, they might try to help people whose circumstances had changed recently, making them vulnerable to a hospital admission. They provided indirect support by helping service users to access existing services in their communities that would enable them to remain socially connected and prevent a decline in their health. They also provided some direct support, which included:

- help with shopping
- picking up prescriptions
- providing transport (for example to visit a spouse or relative in hospital)
- taking people to lunch clubs or other social activities
- helping people to fill out forms for statutory financial help (most commonly Attendance Allowance)
- arranging for adaptations to be fitted in the home, whether paid for privately or accessed through social services.

Sites: Age UK Cornwall, Age UK Oxfordshire, Age UK South Lakeland and Westbank

Discharge from hospital

In the discharge from hospital model, medically fit patients in hospital wards were identified and supported by volunteers in their transition home. The projects provided a variable mix of direct and indirect services. Direct support included activities such as:

- providing transport
- organising and supporting the delivery of equipment to help with mobility and safety in the home
- ensuring that there was food at home
- cooking a meal on the person's return
- help with shopping
- ensuring that the person's house was lit and warm.

Indirect support linked people with local services run by the voluntary sector and the local community. In most projects, the services were designed to be time limited, to avoid creating dependence.

Sites: Leeds service, Age UK Oxfordshire, BRC Derbyshire, RVS Leicestershire and Westbank

A&E to home

The A&E admission avoidance service model, used by only one project – Leeds service – identified people in A&E departments who did not have a medical reason requiring admission to hospital, but yet could not be safely sent home because of social care needs. Through the model, the immediate needs of the person were identified and addressed so as to get them home, thereby avoiding an inpatient admission. They would then be visited the following day, a home assessment would be conducted and any further needs the person might have would be addressed. The project using this approach was resourced to give support that was limited to the three days following discharge from hospital.

Site: Leeds service

Table 3.8: Overview of the models employed by the projects

Project site	Type of service model	Primary sources of referrals
Age UK Cornwall	Community-based support	Community nurses, GPs
BRC Derbyshire	Discharge from hospital	Community hospital, inpatient wards
Westbank, Exeter	Community-based support, discharge from hospital	GPs, inpatient wards, other NHS and community services
RVS Leicestershire	Discharge from hospital	Inpatient wards
Leeds service	A&E admission avoidance, discharge from hospital	A&E, inpatient wards
Age UK Oxfordshire	Community-based support, discharge from hospital	Community therapists, inpatient wards, integrated health and social care teams
Age UK South Lakeland	Community-based support	NHS (community and GPs), social care and self-referral

How the services worked: community-based support schemes

The community-based support projects

Four of the projects used the community-based support approach: Age UK Cornwall, Age UK Oxfordshire, Age UK South Lakeland and Westbank. The rationale behind these projects was that if low-level support could be put in place, this could avert or

delay dependency on health and social care services. Many of the community-based projects were built on accumulated knowledge from primary and community care professionals, who felt that formal services were increasingly limited in what they could offer people:

“What the GPs were saying was they do have people who come to use their services a lot, particularly groups of frail elderly, but they were running out of options really in terms of supporting them, and they really didn’t need high-level clinical care – what they needed was, a lot of the time, companionships, and a number of the people have not been out of their houses for some time, had lost their confidence. I think in some areas we were talking about 40 per cent of the frail elderly population living on their own and then becoming housebound and then very reliant on their health care people, who were their only visitors.”

(Commissioner, Cornwall)

Age UK Cornwall

In Age UK Cornwall, the Reducing Winter Pressures funding was used to expand an already established project – known as ‘Living Well’ (originally based in Newquay and Penwith) – into a new area: East Cornwall. The project aimed to find people at risk of hospital admission. Those referred to the service would establish goals for themselves with the support of Age UK and its ‘Guided Conversation’ tool. The older person would then be connected with a range of voluntary and statutory services as part of a care plan. The service was targeted at people aged over 55 with two or more particular health conditions. The project aimed to cluster the services around GP practices, with the voluntary sector becoming a key member of a multidisciplinary team that would consider the holistic needs of the person.

Age UK Oxfordshire

In Age UK Oxfordshire, the winter pressures project, known formally as ‘Circles of Support’, worked with both people being discharged from hospital (described below) and community prevention. The project built on an existing initiative run by Age UK Oxfordshire, consisting of a county-wide information network that used staff and volunteers to signpost and connect older people with a range of community-based support services. For this project, the community prevention arm consisted of six new members of staff (called community networkers, employed with the Reducing Winter Pressures funding), each based in newly formed (statutory) integrated locality teams. The integrated locality team is a multidisciplinary team with a community matron, clinician, support worker and community networker at its core, embedded in a wider network of community health and social care services, including community therapists, district nurses and reablement teams. The community networkers mainly received referrals from colleagues in community health and social care services and from GPs. Each community networker had a small team of volunteers working with them. The main role for the project team was to address social isolation by helping older people to connect with social activities, organisations and events in their communities. Assistance was also provided with practical issues such as finding cleaners, checking benefits, installing pendant alarms and securing housing or other advice.

Age UK South Lakeland

In Age UK South Lakeland, the winter pressures project, known locally as ‘Compass’, used nine project staff and 54 volunteers based in the Age UK South Lakeland offices. The project was open to people over the age of 50 who were at risk of hospitalisation.

The younger age profile of its services users was reflective of the lower life expectancy in the area, which has significant pockets of deprivation. Referral routes included the NHS (primary care and at discharge from hospital), social care and directly, via self-referral, family or other voluntary sector organisations. Project staff conducted a full assessment of each person referred, using a comprehensive form designed specifically for the project. The form included detailed questions on health, finance, domestic conditions and wellbeing, and was used to calculate a risk score so that services could be targeted more accurately. The project officer was responsible for suggesting a package of services to support clients as a result of the assessment. Interventions included:

- support to complete benefits application forms
- signposting to lifestyle management clubs to help with social isolation
- digital inclusion training
- more generally linking them with other voluntary sector services, including the local networks of Age UK volunteers in villages known as ‘village agents’.

The project staff also completed a second assessment approximately three months after the first, to see if there had been any change in wellbeing as a result of the interventions.

Westbank Community Health and Care

Westbank is an independent charity founded in 1986, based near Exeter in Devon. Westbank was already experienced in delivering a range of services to older people and carers, including befriending services and home-from-hospital support, and had established relationships with local statutory agencies. The funding allowed it to scale up its work to cover a larger geographical area. The winter pressures project, formally known as ‘Neighbourhood Friends’, was aimed at older people (aged 75+) who were at risk of an emergency admission. For the duration of the project, 3.5 full-time equivalent staff worked with over 100 volunteers. The project had a community arm and a hospital discharge arm (on the latter, see the next section: ‘How the services worked: discharge from hospital schemes’). For the community arm, referrals came from GP practices or from other health care professionals. Referrals were assessed by a member of staff, and then a support package was put in place, which drew on volunteers as well as linking to other statutory and voluntary services. Volunteer input ranged from shorter contacts, such as helping an older person get to an appointment, to longer-term befriending, which was open ended in duration.

Community-based support: sources of referrals

These four projects needed to generate referrals from a wide variety of sources (see Table 3.9). One obvious difference between the sites was the degree to which they were able to secure referrals from GP practices, and the NHS more widely. The challenges of building relationships with primary care are discussed more fully in Chapter 6, but projects had mixed experiences in this regard. Where it proved difficult, projects relied more on self-referrals or referrals from other voluntary sector organisations and networks.

Table 3.9: Community-based support projects: main source of referrals recorded in project administrative data

Project site	Main source of referrals (% of referrals)
Age UK Cornwall	Community nurses (39%) GP practices (33%) Self-referral (18%) Social care (4%) Other/unknown (5%)
Age UK Oxfordshire	NHS service (33%) Community therapists (28%) GP practices (10%) District nurses (6%) Hospital/patient support (5%) Falls service (4%) Circles of Support (4%) Reablement service (4%) Social services (3%)
Age UK South Lakeland	Self-referral (35%) Family or carer (12%) GP practices (6%) Village agent (5%) Adult social care (4%) Carers' association (3%) Other/unknown (31%)
Westbank, Exeter	GP practices (Exeter) (39%) GP practices (Budleigh, Exmouth and Woodbury) (17%) Complex care team (Exeter) (10%) Westbank (10%) Age UK Exeter (5%) Acute community team (4%) Complex care team (Budleigh, Exeter and Woodbury) (3%) Other (9%)

Community-based support: services delivered

In terms of the services delivered by the community-based projects (summarised in Table 3.10), there were many similarities between project sites but also some important differences in focus. These differences were usually rooted in the organisational background of the charities themselves. For example, Westbank had more of an emphasis on befriending services, partly through design but also through its considerable experience in delivering befriending services. Meanwhile, Age UK South Lakeland had a strong emphasis on linking people with benefits, which reflected its charitable strengths.

Table 3.10: Community-based support projects: most common types of services recorded in project administrative data

Project site	Main types of services
Age UK Cornwall	Assessments: no further detail supplied
Age UK Oxfordshire	Signposting and direct referrals to other organisations/ services, including: <ul style="list-style-type: none"> • activity clubs and day centres • Age UK Circles of Support • befriending services • benefits advice • carer support • helplines • transport services Telephone contacts Visits
Age UK South Lakeland	Assistance with benefits applications (including Attendance Allowance, Personal Independence Payment, Pension Credit and Disability Living Allowance) General advice Referrals to other organisations/services: <ul style="list-style-type: none"> • adult social care • Department for Work and Pensions • local council • other
Westbank, Exeter	Assessments Practical assistance, including: <ul style="list-style-type: none"> • companionship • emotional support • health and prescriptions • home management • meals and nutrition • shopping • transport from hospital • other transport

How the services worked: discharge from hospital schemes

The discharge from hospital projects

For the projects based in hospital wards, the services were designed with reference to two main expectations:

- that a proportion of delays in getting people home are potentially caused by non-medical problems that could be rectified without the need for professional help
- that if support could be made available for a period of time after discharge, it might also reduce future readmissions.

Leeds service (Age UK, British Red Cross and Carers Leeds)

As well as delivering a service aimed at avoiding admissions in the A&E department (see the next section: 'How the services worked: A&E-based admission avoidance'), the joint project in Leeds also ran a discharge assistance programme. The Reducing Winter Pressures funding allowed for a scaling up of an existing 'home from hospital' service, which used staff and volunteers to help people resettle at home. Up to six weeks of support was provided to prevent future readmissions. The service was open to residents of Leeds aged over 60, who were living alone or with a carer who might have been struggling to cope.

Age UK Oxfordshire

The discharge component of the winter pressures project in Age UK Oxfordshire involved employing two members of staff (known as 'care navigators') to be based within the local acute trust and two community hospitals. The care navigators:

- helped older patients with information about what forms of care were available after discharge (the hospitals had been experiencing a high number of 'choice delays' where patients and their families struggled to navigate the options for self-funded care outside hospital)
- connected service users with the forms of support available from the community arm of the project (see the previous section: 'How the services worked: community-based support schemes'), to reduce isolation and help people regain some independence.

A small team of volunteers were available to the care navigators, who worked closely with social workers in the hospital and ward staff. Volunteers offered a mixture of practical support (transport or befriending) and signposting to other services in the community.

BRC Derbyshire

The winter pressures project in BRC Derbyshire involved scaling up an existing 'home from hospital' project in North Derbyshire. Originally based in a community hospital operating four days a week, the Reducing Winter Pressures funding was used to increase the range of hospitals served (an acute trust and four community hospitals), by boosting the numbers of both staff (from three to nine) and volunteers (from five to twenty). The service was aimed at people over the age of 50 with a long-term condition, who lived alone or with an elderly partner. It involved assisting older people with discharge from hospital and provided up to four weeks of support to help them resettle at home, with the aim of reducing delays and readmissions. Challenges with both staff and volunteer recruitment meant that this project was delayed in getting started taking referrals from December 2014 rather than October 2014.

RVS Leicestershire

As with BRC Derbyshire, the winter pressures project in RVS Leicestershire also involved scaling up an existing 'home from hospital' scheme run by RVS, to cover Leicester City residents, in addition to expanding the scale of the existing service for people in the county of Leicestershire. The service was available to people over the age of 65 who had been admitted to hospital, and it supported them to go home (for example by providing transport, food or checks on their house for their return). The service was then in contact for up to six weeks, to help rebuild the person's independence. The project's expansion meant recruiting an additional 75 volunteers, with roles that included driving, befriending and being present on the wards.

Westbank

In addition to its community-based scheme (see the previous section ‘How the services worked: community-based support schemes’), the service developed by Westbank included extending services to people in the local acute trust: Royal Devon & Exeter NHS Foundation Trust. A member of staff coordinated the services while primarily based in the trust’s rehabilitation ward, although they also received referrals from other wards. As with the community service, a staff member worked with the older person to draw up a plan of support, and volunteers were then used in a range of ways, including in befriending service users.

Hospital discharge projects: source of referrals

Table 3.11 shows the spread of referrals to the hospital discharge schemes. Some projects worked across several sites (for example BRC Derbyshire and RVS Leicestershire). Age UK Oxfordshire’s referrals came from social services based inside the acute trust, as well as from NHS staff.

Table 3.11: Hospital discharge projects: main source of referrals recorded in project administrative data

Project site	Main sources of referrals (% of site referrals)
Leeds service	JAMA (assessment unit) wards, Leeds Teaching Hospitals NHS Trust (45%) Other inpatient wards, Leeds Teaching Hospitals NHS Trust (38%) Other/unknown (17%)
Age UK Oxfordshire	Hospital/patient support (56%) Social services (24%) Other (NHS, self) (20%)
BRC Derbyshire	Chesterfield Royal Hospital (78%) Bolsover Hospital (community trust) (12%) Self (3%) Other/unknown (7%)
RVS Leicestershire	Leicester Royal Infirmary, University Hospitals of Leicester (40%) Glenfield Hospital, University Hospitals of Leicester (25%) Leicester General Hospital, University Hospitals of Leicester (12%) Other hospitals (22%)
Westbank, Exeter	Royal Devon & Exeter Hospital (93%) Other (7%)

Hospital discharge schemes: services delivered

Although the sources of referrals were naturally quite different in kind from the community schemes, the range and types of support offered by the discharge schemes were similar to those provided in the community schemes: a mixture of practical help and signposting to other services (see Table 3.12). The Leeds service and RVS

Leicestershire offered a food hamper to patients going home, but the other projects also made sure that people were returning home to houses that were warm and had enough food. A common feature of all the projects was ensuring that volunteers and staff kept in regular contact with people after discharge, either in person or on the telephone.

Table 3.12: Hospital discharge projects: most common types of services recorded in project administrative data

Project site	Main types of services
Leeds service	Assessments Practical assistance, including: <ul style="list-style-type: none"> • accompanying home from hospital • advice and information • companionship • emotional support • food hamper • home safety • meals and nutrition • shopping Signposting to other organisations/services, including: <ul style="list-style-type: none"> • carer support • voluntary sector organisations
BRC Derbyshire	Assessments Practical assistance, including: <ul style="list-style-type: none"> • companionship • emotional support • health and prescriptions • meals and nutrition • transport from hospital • other transport Telephone contacts Visits
RVS Leicestershire	Referrals to other organisations/services, including: Assessments and reviews <ul style="list-style-type: none"> • activity/lunch clubs • alarms and assistive equipment • benefits and financial advice • domestic help and maintenance • food hamper • general advice • local authority
Westbank, Exeter	Assessments Practical assistance, including: <ul style="list-style-type: none"> • companionship • emotional support • health and prescriptions • home management • meals and nutrition • shopping • transport from hospital • other transport

How the services worked: A&E-based admission avoidance scheme

Leeds service (Age UK, British Red Cross and Carers Leeds)

One project was set up to address a problem experienced by many older people attending an A&E department. Underpinning the project was evidence from clinical staff that admissions could happen because of social rather than medical reasons (perhaps because the person lived alone or had an elderly carer). If informal support could be made available quickly enough, it might avoid an admission by clinical staff who would otherwise be unwilling to take a risk on sending the older person home, and shorten the time the person might spend in a busy acute hospital:

“They’re sort of saying: ‘I can’t let her go home because she hasn’t got food in or she hasn’t got this, she hasn’t got that. If you can help with those things I can then let her go home.’ So that’s quite instantaneous really, we can see, if we can put that support in place and get somebody keeping a watchful eye over the person over the weekend, till the mainstream services start again on Monday, we can send that person home.”

(Project manager, Age UK Leeds)

Although Age UK Leeds was already active within the community in Leeds, this project involved setting up a new service within an A&E department, led by a small number of staff and backed up by a team of volunteers. The service was designed to run from 12 noon until 10pm, seven days a week (including Christmas and New Year), when other services might be unavailable. Older people deemed suitable for referral to the service were helped home from hospital, and were given up to five hours of support by a volunteer, including practical assistance and connections with services in the community, both voluntary and statutory (see Table 3.13).

Table 3.13: A&E-based admission avoidance project: most common types of services recorded in project administrative data, Leeds service

Project site	Main types of services
Leeds service	Assessments Practical assistance, including: <ul style="list-style-type: none"> • advice and information • companionship • emotional support • home safety • meals and nutrition • shopping • transport and accompanying home from hospital Signposting to other organisations/services, including: <ul style="list-style-type: none"> • carer support • voluntary sector organisations

Further observations about the projects as a whole

Complexity of services offered and onward referrals

The overriding picture from both the data we received and the interviews we carried out was of a very heterogeneous set of services, influenced by the needs of the people who had been referred, the availability and skills of the volunteers and, above all, the range of statutory and voluntary services that were available in any given area. Overall, it is difficult to generalise about what services were delivered and with what intensity, a point that should be borne in mind throughout this evaluation report.

All the projects kept records of the type of activity undertaken by staff and volunteers, linked to each service user. We were able to identify almost 60,000 services provided to service recipients. This figure is somewhat arbitrary – there was very large variation in what was recorded as a distinct service between and even within sites. Table 3.14 gives a flavour of the range of practical and administrative tasks recorded in one project – Westbank.

Table 3.14: Detail of services recorded in one project (Westbank) (number of occurrences, shown where > 10)

• Assessment (479)	• House maintenance (26)
• Support for loneliness and/or isolation (439)	• Rehabilitation support (25)
• Getting out and about (231)	• Carer's support (patient's carer) (18)
• Help with shopping (187)	• Using the computer/internet (18)
• Volunteer introduction (187)	• Pet care (15)
• Wellbeing checks (139)	• Collecting prescriptions (11)
• Transport to health care appointment (82)	• Taking people home from hospital
• Fire home safety checks (77)	• Helping with communication
• Support to manage health (46)	• Helping with money and/or benefits
• Support for anxiety and/or depression (40)	• Fitting Keysafe
• Reviews (37)	• Gardening
• Help with meals and/or nutrition (34)	• Carer's support (for patient)
• Other (34)	• Cleaning
• Support to live independently (27)	• Support for mobility problems where they affect warmth and wellness
	• Provision of and instruction in a pendant alarm

As we have described above, all the projects aimed to connect older people with other existing services. In practice, they could be referred to a very broad range of services indeed, shaped by what was already available in the local community. Table 3.15 gives an example of the range of onward referrals made in just one project – RVS Leicestershire – but all the projects had a similarly complex network of onward referrals.

Table 3.15: Onward referrals to other organisations in one project site (RVS Leicestershire)

• Adult social care	• Depression Alliance	• Podiatry Centre, South Wigston
• Alzheimer’s Society	• District nursing	• Red Cross
• Benefits advice	• Fosse Medical Centre	• Re-enablement team
• Blue Badge	• GPs	• Richmond Fellowship
• Charnwood Council	• John Storer House	• Social services
• Christian Aid	• Leicester City Council	• Specsavers
• Community Action Partnership	• Leicester Deaf Action Group	• Stroke Unit
• Contact – Leicester City Council	• Leicestershire Community Project	• Support for carers
• Contact – Leicestershire County Council	• Leicestershire Police	• Telephone Preference Service
• Cossington Leisure Centre	• Local lunch clubs	• University of the Third Age
• Department for Work and Pensions	• Macmillan	• Voluntary Action Leicester
	• Marlene Reid Centre	
	• Melton Community Transport	
	• Opticians	
	• Papworth Trust	

An overview of project spending

An important part of our analysis aimed to assess the extent to which these projects led to changes in the costs of hospital care after referral (see Chapter 5). In this section, we look at the costs involved in establishing the projects.

Table 3.16 provides a summary of each project site’s total funding from the Reducing Winter Pressures Fund during the period July 2014 to June 2015.

Table 3.16: Total funding to project sites from the Reducing Winter Pressures Fund, July 2014 to June 2015

Project site	Total funded amount
Age UK Cornwall*	£200,000
Leeds service	£328,999
Age UK Oxfordshire	£301,319
Age UK South Lakeland	£218,043
BRC Derbyshire	£188,026
RVS Leicestershire	£243,730
Westbank, Exeter	£168,446
All sites	£1,648,563

* During this period Age UK Cornwall was only funded to March 2015

The funding received to put in place the expanded services varied between project sites between July 2014 and June 2015, from £168,446 to £328,999. With 7,062 people referred to the schemes by the end of June 2015 (see Table 3.1), the average funding per person from the Reducing Winter Pressures Fund was £233. Some projects may have received additional matched funding from local commissioners for portions of their services, and so the costs given in Table 3.16 do not necessarily reflect the full costs of providing the services within each of the project sites.

We did not have access to comprehensive information about how the sites spent the Reducing Winter Pressures funds, but the projects' bid documents outlined the anticipated amounts necessary for different types of expenditure. In Table 3.17, we have aggregated this information for the seven funded projects, grouped into broad categories, and we give the overall proportion of costs for each category. It is clear that staff costs were likely to have made up by far the largest area of spending – at around 62 per cent of proposed costs for all the projects combined (varying from 51 per cent to 82 per cent for individual projects).

Table 3.17: Projects' anticipated expenditure, by category, all project sites

Type of expenditure		Proportion of total expenditure
Staff costs	Salaries, including employer costs, includes % of annual salaries relating to managing or supporting volunteers	61.8%
Management/ overheads	Management charges, audit and governance, finance, payroll	9.6%
Operational costs	Volunteer and staff recruitment, induction, training and travel, Disclosure and Barring Service (DBS) checks	8.9%
Advertising, promotion and communication	Materials, stationery, cost of printing, producing and placing advertisements, marketing, performance monitoring, evaluation and reporting	8.1%
Expenses	Venue hire, meeting expenses, training materials, stationery	5.4%
Capital costs	Purchase of technology, mobile technology, laptops for staff or volunteers' use, apps	3.2%
Supplies and equipment	Staff and volunteers' workwear, badges, equipment (resource packs, kit bags, food hampers)	3.0%

Service users' prior hospital use – differences by service type

In the first section of this chapter – 'Overview of all the projects' – we looked at service users' prior hospital use in the 12 months before referral to the projects. Some of the differences we saw between project sites (see Table 3.5) appear to be explained by the type of services the sites offered. Table 3.18 shows another view of service users' prior hospital use, this time split by service type as well as by project site.

People referred to the hospital discharge schemes were most likely to have had a history of emergency admissions in the year prior to referral (over 88 per cent of service users having had at least one, with an average of two admissions each).

The service users of two of the community-based schemes – Age UK South Lakeland and Westbank – were less likely to have had prior emergency admissions (one quarter to a third had at least one), but over four in five still had some type of hospital care in the prior year. Age UK Oxfordshire’s community-based referrals, meanwhile, had a greater history of recent hospital activity than Age UK South Lakeland and Westbank’s (with two-thirds having had an emergency admission, for example).

Table 3.18: Prior hospital activity in the 12 months before referral, by project site and type of scheme

Project site	N	Hospital service										
		All types		All inpatient admissions		Emergency inpatient admissions			Outpatient attendances		A&E visits	
		Any	Any	N per person	Mean bed days	Any	N per person	Mean bed days	Any	N per person	Any	N per person
Community-based schemes												
Westbank, Exeter	284	83.1%	45.1%	1.03	6.9	35.6%	0.54	5.4	75.4%	4.12	48.9%	0.87
Age UK Oxfordshire	349	92.3%	69.6%	1.88	20.2	61.6%	1.21	11.0	83.4%	4.97	60.2%	1.15
Age UK South Lakeland	1,096	86.2%	46.3%	1.24	6.8	28.7%	0.49	5.2	79.1%	5.06	42.5%	0.78
<i>All community</i>	<i>1,729</i>	<i>86.9%</i>	<i>50.8%</i>	<i>1.34</i>	<i>9.5</i>	<i>36.4%</i>	<i>0.64</i>	<i>6.4</i>	<i>79.4%</i>	<i>4.89</i>	<i>47.1%</i>	<i>0.87</i>
Hospital discharge schemes												
BRC Derbyshire	960	97.1%	92.8%	2.86	21.3	84.5%	1.95	13.9	74.1%	3.96	14.5%*	0.28*
Westbank, Exeter	163	98.8%	96.3%	2.37	20.9	92.0%	1.66	18.1	81.6%	5.18	92.6%	1.99
RVS Leicestershire	1,127	99.6%	98.4%	3.02	25.4	92.2%	2.12	18.5	79.9%	4.30	81.5%	1.93
Leeds service	953	98.8%	91.4%	3.00	21.0	87.0%	2.22	19.5	89.1%	5.93	88.0%	2.82
Age UK Oxfordshire	211	99.1%	94.8%	2.55	29.0	91.9%	1.83	20.5	74.9%	4.56	85.8%	1.61
<i>All hospital discharge</i>	<i>3,414</i>	<i>98.6%</i>	<i>94.6%</i>	<i>2.91</i>	<i>23.0</i>	<i>88.5%</i>	<i>2.06</i>	<i>17.6</i>	<i>80.6%</i>	<i>4.72</i>	<i>85.2%</i>	<i>2.26</i>
A&E scheme												
Leeds service	1,130	90.1%	61.6%	1.65	9.4	50.0%	1.18	8.7	83.9%	4.80	62.3%	1.82
All schemes												
All sites	6,273	93.9%	76.6%	2.25	16.8	67.2%	1.51	12.9	80.8%	4.78	59.7%	1.49

* A&E visit numbers are artificially low for BRC Derbyshire. The pseudonymised person identifiers in A&E data from Chesterfield Royal Hospital did not link to other datasets. A&E figures for BRC Derbyshire are not included in the ‘All hospital discharge’ and ‘all sites’ summary figures.

People referred to hospital ward-based schemes were the most likely to have had multiple complex problems (11.9 per cent had five or more long-term conditions), while nearly half (48.3 per cent) of the community-based group had no recorded long-term conditions (see Table 3.19).

Table 3.19: Health problems identified in the two years prior to referral, by service type				
	All service users	Service type		
		Community referrals	Hospital discharge referrals	A&E referrals
Number of service users	6,273	1,729	3,414	1,130
Most common diagnoses (% of group)				
Hypertension	51.4%	35.5%	61.8%	43.9%
Mental ill health	34.5%	21.1%	42.5%	30.6%
Peripheral vascular disease	33.5%	17.5%	43.9%	26.5%
Atrial fibrillation	24.8%	14.5%	31.0%	21.9%
Ischaemic heart disease	22.1%	12.7%	26.6%	23.2%
Fall	22.1%	13.0%	28.8%	15.8%
Diabetes	19.6%	11.9%	24.1%	17.7%
COPD	17.7%	9.4%	21.3%	19.6%
Congestive heart failure	16.7%	7.6%	21.8%	15.1%
Renal failure	15.5%	9.5%	19.6%	12.2%
Cerebrovascular disease	15.0%	9.4%	19.2%	10.7%
Angina	13.5%	6.0%	16.8%	15.1%
Cancer	13.2%	10.3%	15.2%	11.7%
Anaemia	13.0%	7.2%	17.0%	9.7%
Respiratory infection	12.0%	5.7%	15.6%	10.5%
Long-term conditions				
Number per person	1.87	1.13	2.31	1.69
% with none	28.8%	48.3%	15.9%	37.6%
% with 2 or more	50.9%	31.3%	62.8%	44.9%
% with 5 or more	9.2%	3.5%	11.9%	9.7%

Note: Long-term conditions include angina, asthma, cerebrovascular disease, congestive heart failure, connective tissue disease/rheumatoid arthritis, COPD, diabetes, hypertension, ischaemic heart disease, renal failure and sickle cell anaemia.

Other characteristics of people using services

There may well have been other important differences between service users in each of the projects that it has not been possible to measure using available datasets. All the projects aimed to target people who were vulnerable in some way beyond simply having a medical condition: typically people living alone, or with an elderly carer (for example a spouse with health problems), or who were socially isolated in some other way.

Information from the NHS hospital datasets told us little about these aspects of the lives of people who received services. However, each project captured additional information on those referred, for example whether people were living alone or were home owners. Projects also attempted to measure wellbeing, depression and anxiety. These data were not captured consistently within or across sites (with the exception of Age UK South Lakeland, which created its own assessment tool). We have summarised the kinds of data collected in Appendix E.

4. What were the benefits?

This chapter provides evidence of the benefits arising from the projects. As mentioned in the first section of Chapter 2 – ‘Evaluation of staff and user perceptions’ – the picture we gained in this regard was built from interviews, as comparable data on user experience were not collected across the project sites.

The overriding picture from the interviews – with staff, volunteers and NHS colleagues – was one of services that were considered to be of considerable benefit to service users and their families. The services were also reported to deliver important benefits for NHS and other statutory sector staff.

Benefits to older people: meeting unmet needs

The projects described meeting the needs of people who had recently experienced a change in circumstances that had altered their lives in some way (such as a hospital admission), creating new needs.

However, examples were also given of people with longstanding needs who had previously refused help from the statutory sector. All projects were able to offer instances of cases where the additional time available to the volunteers or staff who were assigned to service users meant that people’s apparent resistance to offers of help could be fully understood, in a way that hard-pressed NHS or social care staff may have been unable to do.

In Oxfordshire, for example, an NHS manager described how the Age UK Circles of Support team had helped an older man who had struggled to recover from surgery to his shoulder. The man was sleeping in his chair and had “completely lost trust in the health and social care system”. The project team was able to spend sufficient time with him to understand his situation (bereavement and estrangement from close relatives), and subsequently reconnect him with health services (physiotherapists and mental health services) as well as improve his living conditions (assisting with the purchase of a mattress, among other things) “because he was in a real, real pickle”.

A project manager at Age UK Cornwall gave an example where the project had enabled an older woman to use medical help more appropriately. They described how the woman, recently bereaved and with a respiratory condition, had become quite isolated, despite living with younger relatives:

“Because she was lonely she was looking for ways of getting human contact, and one way of getting human contact is getting GP to visit or getting the nurse round, and working in a different way we got her to be more compliant with her medication. We got her out into the town, linked her up with people, sorted out her transport issues, and now she’s getting out and about most days and has started going back to her bingo group that she used to be quite a keen member of but, because she couldn’t catch the bus, just let that slide, and actually we’re starting to see her use of primary care going down.”

(Project manager, Age UK Cornwall)

Filling a gap in formal services

There were other examples of help being given to people who fell just short of the thresholds for formal care, but could clearly benefit from social contact and low-level practical help. In Leicester, an NHS professional employed in the hospital for 'admission avoidance' felt that the RVS social action project extended the reach of what the formal services could offer:

"[C]arers' time is really stretched, so if somebody falls between that gap of actually being quite socially isolated, but not really needing a carer to go in and do any kind of personal care or prepare a meal or provide any hands-on washing, dressing-type care for the patient, so not every patient wants that or needs that."

(NHS ward staff, Leicestershire)

In one example, the RVS service meant that a woman with Parkinson's disease who did not yet need formal care could be discharged from hospital in the knowledge that there would be someone to contact her on her return home: "[I]t just gave her another point of contact really, which is what it's about for me, just to make sure that they're not isolated at home" (project officer, RVS Leicestershire).

Making people aware that they have needs

Across all the project sites, a common theme emerged from the interviews – of older people who were often reluctant to concede that they might need help. Many examples were given where help had been offered to people who had 'soldiered on' despite increasing frailty, without apparently acknowledging that they needed help, until some sort of turning point. In Age UK South Lakeland, a staff member described helping an elderly couple who had previously refused help from neighbours and health professionals. The couple were surviving on a low income, in a house with no adaptations and "he was struggling to get out of his chair". The project managed to apply for Attendance Allowance, Carer's Allowance, Pension Credit and a grant to get a recliner chair and to have grab rails and smoke alarms fitted throughout the property. The project officer reported that this was not untypical in the area:

"We find that a lot of older people sometimes think, 'Oh I don't need this, I don't need this intervention', they don't think they're poor enough or they've got enough money coming in, and sometimes it just needs that little bit explaining, gentle persuasion: 'Really, you've put into the system long enough now, now it's time to get something back.'"

(Project officer, Age UK South Lakeland)

Even then, interviewees described examples of stubborn independence from a generation that does not like to ask for help:

"I had a 105-year-old a couple of months ago, and I spoke to her son and said, 'We'll try and get some care in for her' and he said, 'Good luck my duck, I've been trying for 40 years to get her to have a washing machine. She still does her own hand washing.' So you get those people who simply don't like change, are very happy with how things are and you won't persuade them."

(NHS ward staff, Leicestershire)

Health care professionals who were interviewed acknowledged the value of the additional time that project staff and volunteers had available to spend with service users, and the fact that the projects were seen as independent from the statutory sector:

“[I]t’s really useful because, also, the officer has a lot more time with people... . It also enables them to get into the sort of conversations health workers often find it very difficult to get into. And people tend to say the things that I want to hear as a GP, rather than telling me that they’ve got financial problems. And, also, because they go and visit them in their homes, it gives much more comprehensive[ness] than if somebody sat in my surgery.”

(GP, South Lakeland)

“[P]atients often don’t like to discuss... or don’t feel it’s appropriate to discuss... those sorts of things with us.”

(GP, Westbank)

The idea that the charities involved were more approachable was endorsed by service users who admitted that they would prefer to discuss their problems with the project staff than statutory services: “I didn’t want to call social services directly... I didn’t want them coming around asking lots of questions” (service user, South Lakeland).

Reducing isolation through practical help

The range of practical help offered through the projects was described in Chapter 3. Many examples were offered in the interviews (backed up by the projects’ activity data) of relatively straightforward acts of help, from changing light bulbs and getting the shopping in, to putting fresh sheets on a bed. A strong theme across many of the interviews was that a practical service was obviously important in its own right (buying food for example), but what made a powerful difference was the impact on the feeling of isolation experienced by many of the older people in the projects.

A recurring theme from interviews in the statutory sector was that, in the past, district nurses, social workers and carers used to have more time to talk with an older person, and get a full understanding of their real abilities to cope with their life, but that these days the pressure on professionals’ time made this impossible. Even when people had social care packages in place, the carers were often described as too rushed to do more than the basic tasks in hand, such as bathing and dressing. By contrast, the social action project staff and volunteers were described as having more time to sit down with the older person and talk to them, for example in hospital wards:

“I think the advantage we can offer is that we look like people that you can actually talk to and we’ve got time to listen to you... we always go and get a chair and sit down because none of the other staff in the hospital ever have time to sit down.”

(Project manager, Age UK Oxfordshire)

For the project based in an A&E department (Leeds), this ability to spend time with a patient was seen to be particularly valuable. An example was provided of where a member of the project staff sat with a patient with dementia who had been brought into the department on their own. As well as meaning that the patient was not left isolated, it saved hospital staff from worrying that the patient would leave the ward unattended, as had happened on previous occasions, resulting in a nurse having to search the hospital to find them.

Staff also reported that the volunteers had time to gain patients' trust, which meant that patients may accept help, which they otherwise would not:

"I've sent them a couple of patients who have got quite complex emotional needs and had refused services, but with the [service] taking them home and having that one-to-one time with them where they can chat, that's what the patients want and they've actually managed to get follow-up calls out of it, whereas I couldn't in here..."
(Ward manager, Derbyshire)

Interviewees were aware of the link between isolation and the risk of ill health and reducing isolation was described as bringing direct benefits. But it also had another dimension: the presence of a volunteer or staff member keeping in regular touch with an older person put them 'on the radar' for statutory services. This was particularly the case where projects were closely linked in with the NHS, for example in Oxfordshire where the Circles of Support project was co-located with professionals, and so project team members were able to feed back to the wider team about any changes in the condition of an older person.

Benefits to families and carers

The interviews painted a picture of the services not only filling a gap in statutory services, but also helping families to support and care for their relatives. This ranged from being able to support a person home from hospital over a weekend until a family member could come to take over, to giving families the confidence to help their older relative themselves. A support worker in the BRC Derbyshire project described how he had helped an older service user to use a walking aid to get out of the house for the first time in nine months:

"And her daughter was totally amazed in the fact that she'd actually gone out to the point of, now, she's still in contact with us and we've managed to get hold of a wheelchair for the family. They do all sorts now. I think they were up at Chatsworth last week. And they manage to get their mum out every Sunday."
(Project officer, BRC Derbyshire)

There were also examples of volunteers and project staff giving family carers some respite directly (by taking them on an outing) or indirectly (by being with a vulnerable person so that the family member could get a break).

A route back to independence

Many of the projects (for example, the Leeds service, Age UK Oxfordshire and RVS Leicestershire) set time limits for their services and were careful to make sure that their activities were enabling independence rather than creating dependence. This could sometimes be a difficult path to navigate, partly because other services, such as befriending, might not be available, and partly because people themselves could take quite some time to gain the confidence or physical strength to reconnect themselves to the services available.

Where input was time limited, interviewees sometimes described a difficult boundary to cross when contact came to an end:

“I try to remain aware of the fact that it has to be a limited service, I think it has to come to an end, and that there has to be a policy in place to make sure that it does, otherwise it can be difficult from both sides – sort of where and when is a good time to end – if there’s not. If it’s just open ended, I think it’s not really good for either side.”
(Volunteer, RVS Leicestershire)

Some of the projects, particularly the one based in South Lakeland, were very active in enabling people to access financial benefits, such as Attendance Allowance, as a means to getting help for themselves. They reported that people were frequently not aware of this benefit, or deterred from applying because of the complexity of the application forms, but that the additional income was very useful in allowing them to afford extra care or to pay for transport to reduce isolation.

Increasing the productivity of health and social care staff

The services provided by the projects were seen as freeing up time for a variety of NHS and social care staff to concentrate on their principal tasks. Interviewees gave examples of:

- releasing the time of ambulance staff by a volunteer taking a patient home by taxi
- freeing up the time of an occupational therapist by a volunteer linking a client into various community programmes rather than the occupational therapist having to research what was available in the area
- a social worker who could leave a volunteer to assist self-funders of care while she focused on those who met the criteria for a social services package.

Staff perceptions – speeding up discharge

In a practical sense, the presence of the projects gave NHS staff an option for enabling patient discharge that they might not have otherwise had and NHS staff recognised the positive impact of the projects on patient discharge. In Leeds, the Age UK project manager reported that the chief executive of the Leeds Teaching Hospitals NHS Trust had credited the project with having helped the hospital through a difficult winter:

“[The] trust had coped much better than they imagined this year. And he did say that was, in no small part, to the Hospital to Home project because they’d been able to free up their medical teams to deal with who they had to deal with and we could take all the rest.”

(Project manager, Age UK Leeds)

Interviewees gave a range of reasons why patients might remain in hospital when they were, in fact, medically ready for discharge. These were commonly either household maintenance issues such as problems with utility services, or a lack of basic provisions in the house ready for the individual’s return. For staff, being able to refer patients to the projects meant that, in instances where patients had little or no social support, these issues in the home could be addressed; otherwise patients had to remain in hospital while other arrangements were made, as the risk was felt to be too great.

Patients with a higher level of need who did not qualify for a social services care package, but required additional care, would sometimes linger on the ward as families, unfamiliar with the options, tried to arrange private care. For patients able to fund their own private care, the projects were able to compile a list of private providers and guide families through their choices. This was particularly helpful to relatives who were either very busy or lived far away and therefore found it difficult to have a direct role:

“So, sometimes, it’s to do with things like relatives at a distance and the person in the hospital – self-funders particularly – need to get on, make a choice about where they’re going to go, particularly if they’re going to go into a care home, but also, if they’re going to organise a care agency. And making those decisions, finding out what’s available, making those decisions about where they might go, sometimes, that can get very delayed by relatives who are going to come but then they can’t come that week and they’re coming the next weekend. And people can finish up with staying in hospital, waiting for those things to happen.”

(Project manager, Age UK Oxfordshire)

Supporting patients and families through these decisions not only sped up the discharge process but also could improve the relationship between relatives and hospital staff and reduce complaints.

“... but [we are] also helping those relationships with families, with families that are at a distance and stopping the complaint almost where families don’t feel engaged, feel they’re being done to rather than them being able to have time to make the decisions.”

(Commissioner, Oxfordshire)

NHS staff working in an acute setting gave examples of how the projects had helped them to manage cases where discharge was being delayed for complex non-medical reasons, and as a result, also gave them the time to deal with medical cases remaining on the wards. The flexibility of the projects was a great advantage in terms of resolving problems. In one instance, a member of the team was able to wait at the service user’s property to accept delivery of equipment at a certain time of day, and in another instance, volunteers were able to move a service user’s bed downstairs so it could be accessed at ground level. It was commented that these types of solutions would have been time consuming to arrange via statutory services, possibly resulting in further delays.

But it was not just hospital staff who described having time released by the presence of volunteers and staff from the social action projects. Community NHS staff explained how the role of trying to connect people back with their communities after a stay in hospital or a deterioration in their health had often fallen to them, but that they were not, in practice, able to do it as thoroughly as the project staff and volunteers. They felt that working with the projects saved them time, allowing them to concentrate on their primary role:

“A district nurse would spend maybe half a day ringing around lots of different voluntary sector agencies to try to put something together for a patient, whereas now she can link with the community networker who can do the majority of that.”

(Manager, integrated care team, Oxfordshire)

“I would have probably tried to look up a few ideas, myself, about what was going on in the area. It’s stuff I would have done but I probably wouldn’t have gone into so much detail and probably might have not had the time to provide as much support as I would have liked on that... . It’s taken the pressure off a little bit I think, for us to work on the physical side of things and work on other goals.”

(Occupational therapist, Oxfordshire)

In one project, Age UK Cornwall, where the voluntary sector projects had been embedded in new community teams, staff satisfaction levels had been measured, with promising results: “[What] we didn’t expect to see was how positive health care workers feel when they’re working in this new model. There was an 87 I think, 87 per cent increase in how positively they felt about it” (commissioner, Cornwall).

Improving NHS staff knowledge of the voluntary sector in general

Another benefit seems to have been raising awareness among NHS staff about the potential of the voluntary sector more generally to support their patients. NHS interviewees described how they were not able to be as up to date as the project staff with regard to the availability of local, low-level supports available. A large part of the offer from projects was the provision of information and advice to staff about services in addition to service users themselves:

“We are getting feedback about what people we work with think of what we’ve done... I was quite interested in the number of people who said, ‘Now I realise what a lot of help there is out there.’ So there is obviously something about people just not knowing everything that’s available or perhaps not knowing anything that’s available.”

(Project manager, Age UK Oxfordshire)

A GP who had made referrals to the Westbank project described how access to the voluntary sector had been very limited previously, a combination of limited services and the hassle of trying to get help put in place relatively quickly:

“There wasn’t really anything before, other than we had, through the local volunteer, voluntary community group, they did occasionally provide buddies for people but they were very few and it was not possible to organise anything on a relatively urgent or semi-urgent basis.”

(GP, Westbank)

Improving the professional satisfaction of staff

Another theme that emerged from interviews with statutory sector staff was the benefits that accrued to them as professionals with the knowledge that they were able to do something positive for people that might previously have been impossible or risky. For example, because there was an enormous pressure to discharge patients from hospital, staff often talked about the anxiety they felt once patients return home; but having these projects reassured them that patients were supported after discharge and made them feel they were doing something rather than nothing:

“... it’s just that reassurance, knowing that someone is out there casting a second eye on the patient, which is really good.”

(Occupational therapist, Leicestershire)

“And I think it has also allowed clinicians who have such busy lives, as soon as you’ve finished with one patient you’re onto the next one, no breathing space waiting there, and it’s been a learning tool for them to understand what’s out in the community and how you can change a conversation, how it is fine to ask somebody, ‘What is it you actually need and want, what will make the difference to you?’ rather than being a profession who goes and fixes things.”
(Commissioner, Oxfordshire)

This sense of improved professional satisfaction did, however, require the social action projects to provide feedback on how people were doing. One NHS staff member also commented that they liked the fact that the projects were able to give them progress updates about patients, a refreshing change from the normal pattern, when the only feedback staff received was when things went wrong, and the patient returned to hospital. Conversely, frustrations were also expressed when there was not enough feedback, particularly in the community projects, when GPs or other professionals referred a person, but heard nothing more about what services were delivered or what benefits it might have brought to the patient.

Benefits to volunteers

Volunteers identified a number of benefits of being part of the projects. For students or those pursuing a career in the health and social care sector, volunteering was seen as valuable experience: “I wanted to volunteer because I’m going to do nursing next year at university and I wanted to be able to get a bit of experience in the community” (volunteer, BRC Derbyshire).

Despite some volunteers being put off by the level of training required to undertake the role, for others the training was a key benefit in addition to the experience they were gaining. The ‘brand’ of the charity was also a source of pride to the volunteers; they discussed feeling that they were contributing to a reputable organisation: “I’ve been doing research about different organisations and I’m really aware that Age UK is the main organisation to assist with elderly people. So that was really a big pulling factor” (volunteer, Leeds).

Volunteers also had personal motives for volunteering, for example:

- not wanting the responsibility of a paid position
- the flexibility of being able to work but also look after young children
- in many instances, perhaps due to experiences with older family members who had been unwell or loved ones they had lost, wanting to feel they were contributing to the community.

The volunteers were universally positive about their experiences: they were pleased to have had the opportunity to contribute something to their communities, however brief the intervention, and they were pleased with the induction and training that they had received:

“It’s just a way of trying to help your local community a little bit really.”
(Volunteer, Westbank)

“I used to be a carer many years ago for my own mother, and she was lucky in the sense that she had our company, because she lived with us, but when people are on their own I don’t think there’s anything worse than loneliness, and some people just want to... they don’t always want a visit from someone strange but they’re quite happy to have a phone call.”

(Volunteer, Westbank)

Interviewees described the satisfaction of seeing people regain some of their independence and confidence, particularly where they had become isolated and resigned to a very limited existence. In some cases, volunteers reported that the whole process of being trained and doing the role had given them valuable confidence, particularly where they had been out of the job market for a while.

5. What was the impact on hospital services after referral to the schemes?

This chapter provides evidence of the impacts of the schemes, derived from national hospital datasets, which we linked to administrative data from each of the project sites.

In contrast to the picture from our interviews (see Chapter 4), our findings here were less encouraging – evidence of reductions in hospital activity following referral to the projects was not apparent, with one possible exception.

Analysis cohort

While some of the projects accepted service user referrals through to spring 2016, lags in the availability of hospital data at the time of analysis meant that we were not able to include any referrals after 30 June 2015. We were therefore limited to examining the first nine months of the schemes, and some of our main results are relevant only for those referred in the first six months (October 2014 to March 2015 inclusive).

Our analysis only examined the impact on hospital activity; we were not able to address any other form of care. For pragmatic reasons, we included in our analyses only service recipients aged 60 or over, and looked only at hospital activity relative to the *first referral* to the schemes where a person had two or more. We excluded a small number of people referred from community hospital trusts and those who were referred but where the data suggested that they had not subsequently received a service from the projects. More information on exclusions is available in Appendix A.

We summarise below our key findings for each of the referral types separately.

Community referrals

For people referred to community-based schemes, we followed their subsequent use of hospital services for as long as possible after referral, and compared the rates of hospital activity against the activity of a very similar matched control group.

Impact on hospital activity and costs in the nine months post referral

The control group was constructed such that, for each person referred to a community scheme, we found an individual who shared the following characteristics at or near the date of referral:

- lived in a similar area (similar as defined by the Office for National Statistics)
- had a very similar calculated risk of a future emergency admission
- had the same gender

- was closely matched on age
- had a similar disease history (using two years' worth of prior hospital data)
- had a similar pattern of prior use of hospital services (again using two years' worth of hospital data).

See Appendix B for further details.

The analysis group consisted of those referred to the schemes between October 2014 and the end of March 2015 (N = 1,076).

We counted all inpatient admissions, outpatient attendances and A&E visits that occurred during the nine months after referral for both the intervention group (the social action referrals) and the selected control individuals.

Costs were also applied to all hospital activity using 2014/15 Healthcare Resource Group (HRG) national tariffs (Monitor and NHS England, 2013) and, where no tariff information was available, 2013/14 reference costs data (Department of Health, 2014). These costs represented the costs that a commissioner would pay for hospital care, not the costs incurred by the acute trusts themselves.

Impact on activity

Appendix C presents both groups' mean monthly admissions (and other hospital events) in the 24 months prior to and nine months after referral.

Table 5.1 displays the mean number of hospital contacts (and, for inpatient admissions, bed days) for the intervention and control groups. The ratio of these means is given (such that values greater than 1 represent *more hospital activity* in the social action intervention group), as is the adjusted ratio. The adjusted ratios were calculated using multivariate regression methods; they attempt to correct for some of the remaining differences between the two groups. As such, the adjusted ratios should be considered our key findings.

On all measures of hospital activity, except for counts of elective admissions, the intervention group had greater levels of post-referral hospital activity than did the matched controls (this was statistically significant at the 5 per cent level). The numbers of A&E visits were 43 per cent higher, while those of emergency admissions were 80 per cent higher.

It should be noted that while these ratios appear to be large in some cases, they are relative to low absolute rates in the groups. For example, 80 per cent higher emergency admissions is equivalent to 0.22 additional emergency admissions per person over the nine-month period (roughly one per five people referred).

Table 5.1: Hospital activity during the nine months post referral. Mean rates and rate ratios. Community referrals to March 2015 (N = 1,076 in each group)

Hospital event	Number per person (standard deviation)		Ratio* (standard error)		High or low compared with controls? (adjusted ratio, at 5% statistical significance)
	Control group	Intervention group	Unadjusted	Adjusted	
Emergency admissions	0.27 (0.70)	0.49 (1.01)	1.80** (0.16)	1.80** (0.17)	High (80% higher)
Elective admissions	0.39 (1.19)	0.50 (3.89)	1.28 (0.34)	1.19 (0.16)	No difference
Outpatient attendances	3.38 (5.61)	3.61 (4.74)	1.07 (0.06)	1.10** (0.07)	High (10% higher)
A&E visits	0.39 (0.93)	0.57 (1.06)	1.47** (0.13)	1.43** (0.13)	High (43% higher)
Total bed days	3.95 (13.4)	7.76 (20.4)	1.97** (0.25)	2.21** (0.34)	High (121% higher)
Emergency bed days	2.78 (11.0)	5.85 (15.7)	2.10** (0.30)	2.36** (0.41)	High (136% higher)
Elective bed days	1.16 (6.64)	1.92 (9.66)	1.65** (0.39)	2.01** (0.47)	High (101% higher)

* > 1 = more activity in the intervention group.

** statistically significant at the 5% level.

Impact on costs

Total hospital costs in the nine months after the community-based referrals were £2,588 per person (see Table 5.2). This was more than the total hospital costs of the control group (£1,745 per person). The adjusted difference between these costs (£751 more per person in the intervention group) represented 43 per cent higher costs for this group in comparison with the control group. This was a statistically significant difference at the 5 per cent level.

Elective admissions were the only type of hospital care where there was no statistically significant difference in costs between the two groups. Otherwise, all other types of hospital contacts were more costly in the social action intervention group. The two groups diverged the most in terms of emergency admissions: these were £457 more costly per person (after adjustment) in the intervention group, a value 53 per cent higher than that of the control group.

Table 5.2: Hospital costs during the nine months post referral. Community referrals to March 2015 (N = 1,076 in each group)

Hospital event	Mean cost £ per person (standard deviation)		Difference in mean costs £ per person* (standard error)		High or low compared with controls? (adjusted ratio, at 5% statistical significance)
	Control group	Intervention group	Unadjusted	Adjusted	
Emergency admissions	860.8 (2,592)	1,430.5 (3,293)	569.7** (118.9)	456.6** (121.4)	High cost (53% higher)
Elective admissions	410.9 (1,382)	540.4 (2,976)	129.5 (99.8)	159.2 (98.2)	No difference
Outpatient attendances	430.3 (643.1)	550.7 (667.6)	120.5** (24.9)	115.4** (24.8)	High cost (27% higher)
A&E visits	43.2 (103.0)	66.7 (127.0)	23.5** (4.6)	19.4** (4.7)	High cost (45% higher)
All (total costs)	1,745.1 (3,302)	2,588.4 (4,757)	843.2** (166.1)	751.1** (166.9)	High cost (43% higher)

* > 0 = higher costs for the intervention group.

** statistically significant at the 5% level.

Hospital discharge referrals

For people referred to hospital discharge schemes from inpatient wards, we were able to make two types of assessments of the impact of the schemes:

- We assessed the possible effects of the schemes on the hospital admission spell itself – did the schemes appear to help people get discharged earlier?
- We tracked all types of hospital activity for as long as possible after referral (as above for the community schemes).

We used two separate matched control groups for comparisons, one for each of these outcomes.

Impact on the hospital admission spell

For each person referred to a hospital scheme while as an admitted inpatient, we found a control individual who shared the following characteristics at or near the date of referral:

- was an admitted inpatient at a similar hospital
- had a very similar predicted length of stay (on the day of admission)
- had the same gender
- was closely matched on age
- had a similar disease history (using two years' worth of prior hospital data)

- had a similar pattern of prior use of hospital services (again using two years' worth of hospital data).

See Appendix B for further details.

The analysis group consisted of those referred to the schemes between October 2014 and the end of June 2015 (N = 1,814).

The intervention group and selected control group were matched on their predicted length of stay. Table 5.3 compares the observed average lengths of stay. The intervention group hospital admission spell was an average of 11.4 days per person – longer than that of the control group (8.7 days per person). The relative difference of 2.8 days was statistically significant at the 5 per cent level. This additional length of stay was associated with higher costs (£355 per person) in the intervention group versus the controls.

Table 5.3: Length of stay and cost of the referral spell. Mean values and difference in means. Hospital inpatient referrals to June 2015 (N = 1,814 in each group)

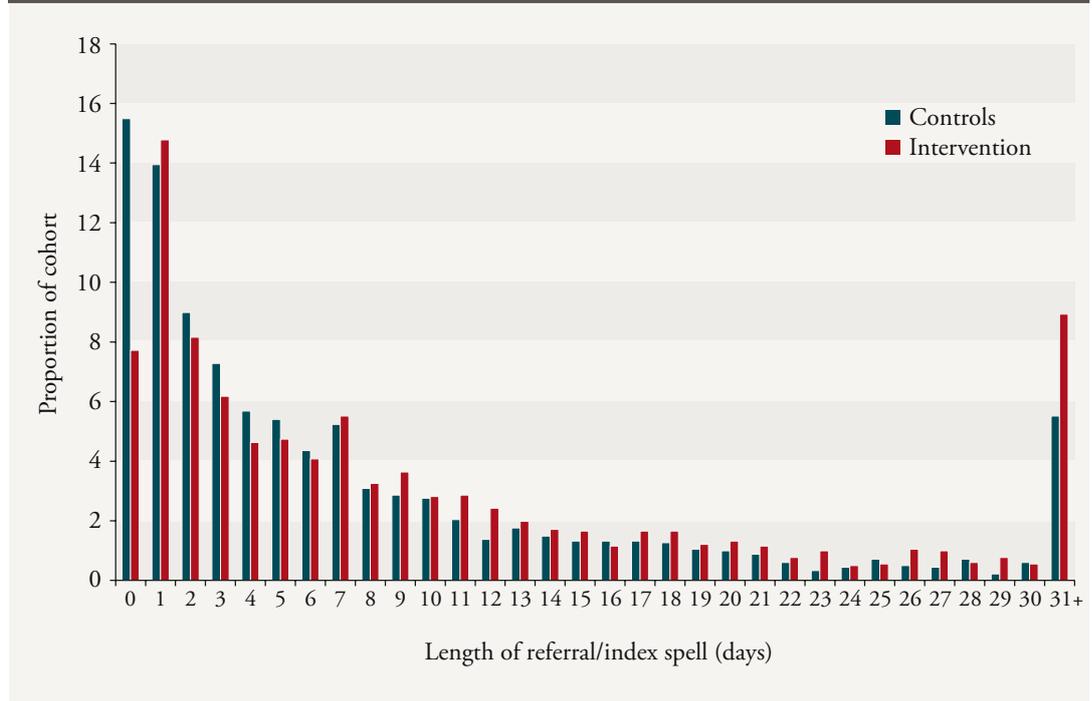
Measure	Findings for each measure (standard deviation)		Difference in means* (standard error)		High or low compared with controls? (adjusted ratio, at 5% statistical significance)
	Control group	Intervention group	Unadjusted	Adjusted	
Mean length of stay of referral admission, days per person	8.7 (12.9)	11.4 (14.8)	2.8** (0.44)	2.8** (0.45)	High by 2.8 days (33% higher)
Mean cost of referral admission, £ per person	2,359 (2,132)	2,707 (2,317)	348.6** (69.8)	354.6** (70.6)	High by £355 (15% higher)

* > 0 = higher in the intervention group.

** statistically significant at the 5% level.

Figure 6.1 reveals some detail behind these observed differences. There were double the number of same-day discharges in the control group as there were in the intervention group (15.5 per cent against 7.7 per cent respectively). Furthermore, while the two groups otherwise showed broadly similar distributions of length of stay, the intervention group generally had higher numbers of the longer lengths of stay (from seven days and longer).

Figure 6.1: Length of stay of admission spell (N = 1,814 in each group)



Impact on hospital activity and costs in the nine months post referral

For each person referred to a scheme while as a hospital inpatient, we found a control individual who shared the following characteristics at or near the date of referral:

- was an admitted inpatient at a similar hospital
- had a very similar calculated risk of a future emergency admission (on the day of discharge)
- had the same gender
- was closely matched on age
- had a similar disease history (using two years' worth of prior hospital data)
- had a similar pattern of prior use of hospital services (again using two years' worth of hospital data).

See Appendix B for further details.

The analysis group consisted of those referred to the schemes between October 2014 and the end of March 2015 (N = 1,016).

We counted all inpatient spells, outpatient attendances and A&E visits that occurred during the nine months after referral for both the intervention group and the selected control individuals. We also applied costs to this activity (as above).

Impact on activity

Appendix C presents both groups' mean monthly admissions (and other hospital events) in the 24 months prior to and nine months after referral.

Table 5.4 displays the mean number of hospital contacts (and, for inpatient admissions, bed days) for both groups. The ratio of these means is given (such that values greater than 1 represent *more activity* in the intervention group), as is the adjusted ratio – which should be considered our final attempt to allow for some of the remaining differences between the two groups.

In terms of the adjusted ratios, the intervention group had greater average post-referral emergency hospital admissions (and bed days) than did the matched controls (22 per cent higher admissions, 35 per cent higher bed days). These differences were statistically significant at the 5 per cent level. For the hospital discharge referrals group, emergency hospital admissions after referral were much more common than for the community referrals group (compare with Table 5.1); in absolute terms, the difference in admissions between the two groups was not dissimilar (0.23 per person, compared with 0.22 per person for the community referral group).

Meanwhile, elective admissions and bed days were lower for the intervention group compared with the control group (by 31 per cent and 37 per cent respectively). The total number of bed days was higher for the intervention group (by 22 per cent compared with the control group). There were no statistically significant differences between the two groups in terms of outpatient attendances or A&E visits.

Table 5.4: Hospital activity during the nine months post referral. Mean rates and rate ratios. Hospital discharge referrals to March 2015 (N = 1,016 in each group)

Hospital event	Number per person (standard deviation)		Ratio* (standard error)		High or low compared with controls? (adjusted ratio, at 5% statistical significance)
	Control group	Intervention group	Unadjusted	Adjusted	
Emergency admissions	1.06 (1.53)	1.39 (1.92)	1.31** (0.07)	1.22** (0.07)	High (22% higher)
Elective admissions	0.77 (4.08)	0.38 (1.51)	0.49** (0.10)	0.69** (0.07)	Low (31% lower)
Outpatient attendances	4.22 (5.54)	3.69 (4.54)	0.87** (0.05)	0.95 (0.05)	No difference
A&E visits	1.20 (1.78)	1.17 (2.18)	0.98 (0.07)	0.93 (0.06)	No difference
Total bed days	14.47 (26.7)	17.72 (29.3)	1.22** (0.09)	1.22** (0.10)	High (22% higher)
Emergency bed days	11.11 (22.1)	15.25 (27.1)	1.37** (0.11)	1.35** (0.13)	High (35% higher)
Elective bed days	3.38 (13.3)	2.48 (9.54)	0.74 (0.13)	0.63** (0.12)	Low (37% lower)

* > 1 = more activity in the intervention group.

** statistically significant at the 5% level.

Impact on costs

Total hospital costs in the nine months after hospital discharge scheme referrals were £4,858 per person (see Table 5.5). This was only slightly more than the total hospital costs of the control group (£4,680 per person). The adjusted difference between these two means was only £125. This was not a statistically significant difference (at the 5 per cent level) – total hospital costs post referral were essentially the same for the intervention group and for the control group.

However, there were statistically significant differences between the groups in terms of the costs of emergency admissions and elective admissions separately. Emergency admissions (£3,798 per person in the intervention group) were £493 more costly per person after adjustment (16 per cent more costly than the control group). Elective admissions (totalling only £298 per person in the intervention group) were less costly by £366 per person after adjustment (44 per cent lower than the control group). These two opposing differences in costs largely balanced each other out overall, and there was very little difference between the groups in terms of the costs of outpatient and A&E care.

Table 5.5: Hospital costs during the nine months post referral. Hospital discharge referrals to March 2015 (N = 1,016 in each group)

Hospital event	Mean cost, £ per person, (standard deviation)		Difference in mean costs, £ per person* (standard error)		High or low compared with controls? (adjusted difference, at 5% statistical significance)
	Control group	Intervention group	Unadjusted	Adjusted	
Emergency admissions	3,067 (4,874)	3,798 (5,490)	731.0** (213.9)	493.1** (220.6)	High cost (16% higher)
Elective admissions	832.9 (4,065)	297.9 (1,205)	-535.0** (131.6)	-366.3** (83.2)	Low cost (44% lower)
Outpatient attendances	639.3 (800.8)	622.8 (658.8)	-16.5 (30.4)	-4.6 (30.4)	No difference
A&E visits	141.1 (203.2)	139.3 (258.9)	-1.8 (9.4)	2.2 (9.4)	No difference
All (total costs)	4,680 (6,720)	4,858 (5,999)	177.7 (266.2)	124.5 (251.1)	No difference

* > 0 = higher costs for the intervention group.

** statistically significant at the 5% level.

A&E referrals

For people referred to the A&E scheme in Leeds, we were able to make two kinds of assessments of the impact of the schemes:

- We assessed the possible effects of the scheme in terms of admission avoidance – did the scheme appear to reduce the number of people admitted to an inpatient bed?
- We tracked all types of hospital activity for as long as possible after the referral (as above for the community-based and hospital inpatient schemes).

We used a single control group for both of these outcomes.

For each person referred to the A&E scheme, we found a control individual who shared the following characteristics at or near the date of referral:

- had visited an A&E department at a similar hospital
- had a very similar calculated risk of an admission from A&E
- had the same gender
- was closely matched on age
- had a similar disease history (using two years' worth of prior hospital data)
- had a similar pattern of prior use of hospital services (again using two years' worth of hospital data).

See Appendix B for further details.

Impact on immediate admissions

The analysis group consisted of those referred to the scheme between October 2014 and the end of June 2015 (N = 1,007).

The intervention group and control group were matched on their predicted probability of being admitted. Table 5.6 compares the proportion that actually were admitted in each group.

The intervention group had fewer admissions than the control group: 56.0 per cent were admitted, compared with 65.2 per cent of the control group. This difference was statistically significant at the 5 per cent level. The mean lengths of stay of the resulting emergency inpatient admissions were lower for the intervention group by 1.5 days per person, and costs were lower by £284 per person (both after adjustment).

Table 5.6: Admissions from A&E, and resulting lengths of stay and costs of stay. A&E referrals to June 2015 (N = 1,007 in each group)

Measure	Findings for each measure (standard deviation)		Differences* (standard error)		High or low compared with controls? (adjusted difference, at 5% statistical significance)
	Control group	Intervention group	Unadjusted	Adjusted	
Proportion of group admitted to inpatient bed	65.2%	56.0%	-9.2%** (2.2%)	-9.9%** (0.0%)	Low by 9.9% (15% lower)
Mean length of stay of resulting admission, days per person	6.9 (12.9)	5.3 (11.1)	-1.6** (0.5)	-1.5** (0.5)	Low by 1.5 days (22% lower)
Mean cost of resulting admission, £ per person	1,761 (2,291)	1,471 (1,950)	-290.3** (92.1)	-284.0** (93.3)	Low by £284 (16% lower)

* > 0 = higher costs for the intervention group.

** statistically significant at the 5% level.

Impact on hospital activity and costs in nine months post referral

For assessing impact on hospital activity and costs in nine months post referral, the analysis group consisted of those referred to the A&E scheme between October 2014 and the end of March 2015 (N = 739).

We counted all inpatient spells, outpatient attendances and A&E visits that occurred during the nine months after referral for both the intervention group and the selected control individuals. We also applied costs to this activity (as above).

Impact on activity

Appendix C presents both groups' mean monthly admissions (and other hospital events) in the 24 months prior to and nine months after referral.

Table 5.7 displays the mean number of hospital contacts (and, for inpatient admissions, bed days) for both groups. The ratio of these means is given (such that values greater than 1 represent more activity in the intervention group), as is the adjusted ratio – which should be considered our final attempt to allow for some of the remaining differences between the two groups.

The intervention and matched control groups had very similar patterns of admissions, outpatient attendances and A&E visits. The only statistically significant difference between the groups appeared to be in terms of elective bed days – which were lower (by 74 per cent) in the intervention group compared with the control group. There was, however, no difference between the groups in terms of overall numbers of bed days.

Table 5.7: Hospital activity during the nine months post referral. Mean rates and rate ratios. A&E referrals to March 2015 (N = 739 in each group)

Hospital event	Number per person (standard deviation)		Ratio* (standard error)		High or low compared with controls? (adjusted ratio, at 5% statistical significance)
	Control group	Intervention group	Unadjusted	Adjusted	
Emergency admissions	1.66 (1.79)	1.73 (2.05)	1.04 (0.06)	1.01 (0.05)	No difference
Elective admissions	0.36 (1.01)	0.37 (1.50)	1.03 (0.18)	0.93 (0.15)	No difference
Outpatient attendances	4.23 (6.76)	4.05 (4.47)	0.96 (0.06)	0.95 (0.06)	No difference
A&E visits	1.37 (2.20)	1.61 (3.19)	1.17 (0.10)	1.05 (0.07)	No difference
Total bed days	17.79 (26.5)	17.76 (28.0)	1.00 (0.08)	1.01 (0.08)	No difference
Emergency bed days	16.00 (23.9)	17.19 (27.6)	1.07 (0.09)	1.07 (0.09)	No difference
Elective bed days	1.80 (11.0)	0.57 (4.03)	0.32** (0.12)	0.26** (0.07)	Low (74% lower)

* > 1 = more activity in the intervention group.

** statistically significant at the 5% level.

Impact on costs

Total hospital costs in the nine months after the A&E scheme referrals were £5,581 per person (see Table 5.8). This was only slightly more than the total hospital costs of the control group (£5,357 per person). The adjusted difference between these two means was only £119. This was not a statistically significant difference (at the 5 per cent level). As for the hospital discharge schemes above, total hospital costs post referral were essentially the same in the intervention group and in the control group.

We only found statistically significant differences between the groups in terms of future A&E visit costs – although the difference (£34 per person after adjustment) was relatively minor.

Table 5.8: Hospital costs during the nine months post referral. A&E referrals to March 2015 (N = 739 in each group)

Hospital event	Mean cost, £ per person, (standard deviation)		Difference in mean costs, £ per person* (standard error)		High or low compared with controls? (adjusted difference, at 5% statistical significance)
	Control group	Intervention group	Unadjusted	Adjusted	
Emergency admissions	4,303.3 (4,902)	4,432.0 (5,112)	128.6 (248.0)	61.1 (248.9)	No difference
Elective admissions	324.0 (1,043)	373.9 (1,457)	49.9 (65.6)	20.4 (64.6)	No difference
Outpatient attendances	580.7 (900.9)	590.7 (608.0)	10.0 (38.0)	3.1 (37.5)	No difference
A&E visits	149.4 (234.5)	184.6 (360.5)	35.2** (15.0)	33.8** (14.4)	High cost (23% higher)
All (total costs)	5,357.4 (5,454)	5,581.2 (5,696)	223.7 (276.6)	118.5 (275.5)	No difference

* > 0 = higher costs for the intervention group.

** statistically significant at the 5% level.

Analyses by area

Table 5.9 shows average (per person) costs for all hospital activity in the nine months following referral for each of the project sites, grouped by referral type (community-based, hospital discharge or A&E). The differences between the control and intervention groups are shown such that those > 0 are more costly in the intervention group.

The results by area were consistent with the results for the separate referral types (see Tables 5.2, 5.5 and 5.8). For all hospital-based schemes (both hospital discharge and A&E), there were no statistically significant differences in mean costs between the intervention group and the matched control group at the 5 per cent level after referral.

For the three community-based schemes, costs post referral were relatively high for the intervention group – by £918 per person in Westbank, £1,311 per person in Age UK Oxfordshire and £556 per person in Age UK South Lakeland (all after adjustment). These differences were statistically significant at the 5 per cent level.

Care should be taken with interpreting area-based results (as well as other analyses of subgroups). The chosen matched cohorts were selected to look as similar as possible to the service users for all project sites grouped together. It was likely that the quality of the matching was poorer for subgroups.

Table 5.9: Total hospital costs during the nine months post referral, by project site and service type. Referrals to March 2105

Project site, by service type	N	Mean cost, £ per person (standard deviation)		Difference in mean costs, £ per person* (standard error)		High or low compared with controls? (adjusted difference, at 5% statistical significance)
		Control group	Intervention group	Unadjusted	Adjusted	
Community-based schemes						
Westbank, Exeter	176	1,317 (2,039)	2,329 (6,357)	1,012** (481)	918** (425)	High cost (70% higher)
Age UK Oxfordshire	225	2,116 (3,760)	3,449 (5,106)	1,333** (380)	1,311** (403)	High cost (65% higher)
Age UK South Lakeland	675	1,733 (3,394)	2,369 (4,078)	636** (196)	556** (198)	High cost (34% higher)
Hospital discharge schemes						
BRC Derbyshire	248	4,710 (6,080)	5,136 (5,963)	426 (529)	-221 (689)	No difference
Westbank, Exeter	72	3,442 (5,078)	4,475 (5,847)	1,032 (889)	432 (867)	No difference
RVS Leicestershire	286	4,189 (6,093)	4,249 (5,358)	61 (464)	183 (412)	No difference
Leeds service	349	5,254 (7,889)	5,327 (6,541)	74 (500)	23 (449)	No difference
Age UK Oxfordshire	61	5,040 (6,230)	4,341 (5,810)	-699 (1,026)	-1,047 (1,122)	No difference
A&E scheme						
Leeds service	739	5,357 (5,454)	5,581 (5,696)	224 (277)	118 (275)	No difference

* > 0 = higher costs for the intervention group.

** Statistically significant at the 5% level.

Other analyses

We carried out a small number of secondary analyses to better understand our findings. These included two subgroup analyses that examined the outcomes for different age groups and for different levels of predicted risk of future admissions.

Both of these analyses were intended to help answer questions about the targeting of the social action schemes: could they be more successful at reducing future hospital admissions when, for example, targeted at those of a certain age group, or those of a particular risk of future admission?

Our results (in terms of all hospital costs in the nine months after referral) are presented in Appendix D but they are somewhat ambiguous. There were no clear patterns in relative benefits in terms of age groups or risk levels.

Impact on hospital costs overall

In Table 5.10 we draw together, from Tables 5.2, 5.5 and 5.8, our findings on average hospital costs in the nine months post referral for each of the types of scheme (community-based, hospital discharge and A&E referrals).

Putting the information together in this way emphasises an important, although not unexpected, point: hospital costs following referral were much higher for those referred from hospital than for those referred into community-based schemes (roughly twice as high for the intervention group and three times as high for the control group).

We also show in Table 5.10 the difference between the social action referrals and the matched controls when all people are grouped together. As in the above tables, the differences between the intervention and control groups are shown such that those > 0 are more costly in the intervention group.

Overall – for any type of referral up to March 2015 – we found in the intervention group, hospital activity costs were an average of £4,184 per person in the nine months following referral. These costs were higher than those of the matched control group during the same period (£3,741 per person). When adjusted for remaining differences between the groups, hospital costs were £369 per person more expensive for the intervention group (representing 10 per cent higher total hospital costs compared with the matched controls).

So in sum we found that hospital costs tended to be higher for those referred to the social action schemes to March 2015.

Table 5.10: Hospital costs during the nine months post referral. Various referral groups, and all people together. Referrals to March 2015

Referral group	Hospital event	Mean cost, £ per person, (standard deviation)		Difference in mean costs, £ per person* (standard error)		High or low compared with controls? (adjusted difference, at 5% statistical significance)
		Control group	Intervention group	Unadjusted	Adjusted	
Community referrals (N = 1,076 in each group)	Emergency admissions	860.8 (2,592)	1430.5 (3,293)	569.7** (118.9)	456.6** (121.4)	High cost (53% higher)
	Elective admissions	410.9 (1,382)	540.4 (2,976)	129.5 (99.8)	159.2 (98.2)	No difference
	Outpatient attendances	430.3 (643.1)	550.7 (667.6)	120.5** (24.9)	115.4** (24.8)	High cost (27% higher)
	A&E visits	43.2 (103.0)	66.7 (127.0)	23.5* (4.6)	19.4** (4.7)	High cost (45% higher)
	All (total costs)	1,745.1 (3,302)	2,588.4 (4,757)	843.2** (166.1)	751.1** (166.9)	High cost (43% higher)
Hospital inpatient referrals (N = 1,016 in each group)	Emergency admissions	3,067 (4,874)	3,798 (5,490)	731.0** (213.9)	493.1** (220.6)	High cost (16% higher)
	Elective admissions	832.9 (4,065)	297.9 (1,205)	-535.0** (131.6)	-366.3** (83.2)	Low cost (44% lower)
	Outpatient attendances	639.3 (800.8)	622.8 (658.8)	-16.5 (30.4)	-4.6 (30.4)	No difference
	A&E visits	141.1 (203.2)	139.3 (258.9)	-1.8 (9.4)	2.2 (9.4)	No difference
	All (total costs)	4,680 (6,720)	4,858 (5,999)	177.7 (266.2)	124.5 (251.1)	No difference
A&E referrals (N = 739 in each group)	Emergency admissions	4,303.3 (4,902)	4,432.0 (5,112)	128.6 (248.0)	61.1 (248.9)	No difference
	Elective admissions	324.0 (1,043)	373.9 (1,457)	49.9 (65.6)	20.4 (64.6)	No difference
	Outpatient attendances	580.7 (900.9)	590.7 (608.0)	10.0 (38.0)	3.1 (37.5)	No difference
	A&E visits	149.4 (234.5)	184.6 (360.5)	35.2** (15.0)	33.8** (14.4)	High cost (23% higher)
	All (total costs)	5,357.4 (5,454)	5,581.2 (5,696)	223.7 (276.6)	118.5 (275.5)	No difference
All schemes (N = 2,831 in each group)	Emergency admissions	2,551.0 (4,397)	3,063.5 (4,842)	512.5** (110.2)	376.0** (111.7)	High cost (15% higher)
	Elective admissions	539.7 (2,643)	409.9 (2110)	-129.7** (63.2)	-68.3 (52.2)	No difference
	Outpatient attendances	544.6 (779.3)	587.0 (649.9)	42.5** (17.6)	43.5** (17.3)	High cost (8% higher)
	A&E visits	106.1 (188.7)	123.5 (257.6)	17.5** (5.5)	17.3** (5.4)	High cost (16% higher)
	All (total costs)	3,741.3 (5,533)	4,184.0 (5,622)	442.7** (135.5)	368.6** (131.4)	High cost (10% higher)

* > 0 = higher costs for the intervention group. ** Statistically significant at the 5% level.

6. Implementation challenges

In this chapter we set out our observations and analysis of the challenges and experience of the projects in setting up and running the services. While some challenges were common to the projects regardless of their service model (for example building up staff and volunteer numbers), others were more dependent on the type of service being provided.

We start and end this chapter with common challenges, while in the sections in between we outline specific challenges faced by the three main service types: community, hospital discharge and A&E.

Common challenges

The timetable set by the Cabinet Office was tight: grants were awarded in July 2014 and projects were expected to be able to take referrals from October 2014. During this period, projects needed to recruit staff and volunteers, and build relationships with the various organisations that would be referring users to the new services, including statutory services (such as NHS trusts) and other voluntary and community bodies locally.

There was considerable variation in how the seven projects were structured and operated, and some of this variation could be explained by the structure of the lead charities themselves. Although all projects were required to have a broad base of stakeholders involved in steering them, in practice the recruitment and training of staff and volunteers, for example, was influenced by the processes and policies already in use by the charity leading each project. The projects varied in terms of their decision-making autonomy. One project – Westbank – was a standalone independent charity. The Age UK organisations were also independent local charities, although affiliated with the national Age UK. For BRC and RVS, day-to-day operation could be more influenced by national-level charity governance (for instance the degree to which they had to follow national requirements for the duration of volunteer training courses or could flex them to local circumstances).

Recruiting staff

At the outset, the projects were funded for a fairly short duration (nine months) and so they were all looking to recruit some staff on short-term contracts, alongside seconding other staff into the project from within their local organisations. Despite this, some of the project managers reported that well-qualified candidates had come forward, often with a background in health and social care, willing to take on the short-term contracts.

Overall, project managers described the recruitment of staff as quick and intensive, so that they could begin taking referrals within the prescribed timescale. They described the process as faster than they were accustomed to working, which at times was challenging. But they also reflected that it demonstrated that their organisations could, when pressed, set up services much more quickly than in the past, and this generated confidence for the future. The high-profile nature of the funders contributed to this. Furthermore, the knowledge that the funding included a formal evaluation was mentioned in the interviews as a positive driver to get up and running fast in order to prove that these sorts of services could add value to the health and care system.

Staff were recruited in various ways. In some cases, for example Age UK South Lakeland, new staff were taken on to work within the existing Age UK office. In other cases, for example Age UK Oxfordshire, Age UK staff were placed alongside statutory NHS and social care employed staff working in new integrated teams. This required the project to put in place honorary NHS contracts, to provide access to (and training for) NHS computer systems and to navigate working in health and social care teams, which were still taking shape at the time of the interviews. Overall, staff worked in a variety of settings, including A&E, acute inpatient wards and community hospitals, often dividing their time between different locations.

In terms of whether the projects could continue to meet (and theoretically exceed) their referral targets, there was some concern that this was not sustainable at existing staffing levels. One project staff member highlighted the reliance on a small number of highly dedicated staff, many of whom were working overtime for free: “We just threw everything at it to make it work. In the long term, I think we need to consider that, to be honest” (project manager, Age UK Leeds).

Recruiting volunteers

All of these organisations had had experience of delivering services through volunteers prior to the projects, and were therefore able to draw on existing recruitment and training procedures. In some cases, however, the projects involved a considerable increase in the number of volunteers relative to the existing volunteer base. For example, the Leeds-based project planned to quadruple its volunteer numbers. Project managers described how they had responded to this challenge by using different methods to attract potential volunteers. These included local radio, local newspapers, churches, approaching large local employers, social media and using existing mailing lists for the third sector.

Projects reported that many volunteers had come forward because of their direct experience of having relatives or friends going through the health and care system: “There tends to be a pattern amongst those who want to volunteer to support older people: it’s usually people who have had an experience around a parent or grandparent, or usually around loss or bereavement, or often they’re trying to fill a gap” (project officer, Westbank).

Some of the projects explicitly looked for volunteers from different backgrounds from those they usually recruited. The team at Westbank, for example, designed their intervention with three different levels of volunteer time commitment, with the aim of attracting additional volunteers who might have had limited time to give but were still keen to contribute. They were keen to get younger volunteers to diversify what had been a mainly older, retired volunteer base and recruited through both the local university and the medical school. “We recognised that there are a lot of people who work full time who want to volunteer... also we didn’t just concentrate on people who are older because we recognised that young people have got a lot to give as well” (project manager, Westbank).

In Leeds, the project team also found that they were able to successfully target younger volunteers, particularly students, to work on the project. These volunteers were keen to gain experience of working in a health and social care environment, in this case an A&E department, although the pressures of the working environment did create problems (discussed below).

The majority of the project sites had a good response to their adverts and most reached good numbers quickly. However, some projects were to find later that, even with a good response, they needed to keep recruiting at capacity and could never quite recruit quickly enough.

Training volunteers

The projects used a range of techniques for processing potential volunteers. These included an initial screening over the telephone, formal interviews, and initiating the process for getting clearance through the Disclosure and Barring Service (DBS). The projects reported using induction and training packages already in use in their respective organisations, which typically covered safeguarding, lone working, data protection and confidentiality. Additional training for specific roles was also provided in some of the projects, for example Age UK South Lakeland, for its new wellbeing programme.

Among the volunteers we interviewed, the training was well received, although the DBS vetting procedure was often described as frustratingly slow. For some volunteers, the experience of interacting with older people with memory loss was a new one, but the training and support behind the projects had given them some confidence. One volunteer in Westbank described how the processes in place had been reassuring: “You know, I wouldn’t just knock on someone’s door and say I’m here to help you if the scheme wasn’t there behind me, so it just makes it all official, and I’ve had the DBS check, it’s well organised and managed” (volunteer, Westbank).

While all of the organisations recognised that the vetting procedures were essential in relation to volunteers, these could in some cases be off-putting for potential volunteers. Westbank, for example, noted that there was a gap between the number of people who registered an interest in volunteering and the number who were willing to comply with the procedures in practice: “We did lose quite a lot by the wayside, but it’s only right that we should do that” (project officer, Westbank).

One project – BRC Derbyshire – had a much more frustrating experience both recruiting and training volunteers. It had to follow national procedures for training, which lasted four days, considerably longer than the one or two days’ training put on by most of the other projects. The project manager described how this lengthy, mandatory training deterred both younger and older volunteers: younger people who were working or studying struggled to find the time, whereas older, retired volunteers disliked the paperwork and found that the training meant it started to ‘look like a job’. This led to a delayed start to the project in Derbyshire, which had a negative impact on the staff. Ongoing challenges in recruiting and retaining volunteers meant that the project was turned down for a second phase of extended funding:

“From the time we found out that we didn’t get the funding, people started to look for work straightaway... . So then, things I’ve had to do since, one is a lot of time individually with the members of the team, reassuring them, trying to reduce anxiety about the uncertainty of what that means and reassuring them that we are doing a fantastic job.”

(Project manager, BRC Derbyshire)

Monitoring and supervising volunteers

The projects reported varying approaches to monitoring and supervision. In Age UK Oxfordshire, a small group of volunteers was assigned to each of six staff project workers (themselves embedded in multidisciplinary teams). RVS Leicestershire kept a database of volunteers' time, and volunteers were also expected to keep a service log, so the project could keep track of the different services being delivered by the volunteer, whether driving or befriending for example.

Most projects found that staff and assigned volunteers developed close working relationships that evolved over time, as volunteers gained experience and confidence, and staff learned how best to use the skills and available time of their volunteers. Project leaders also found that staff needed to provide psychological support to volunteers, particularly where, as expected, cases emerged that unearthed unmet need or safeguarding concerns. This proved to be a complex and time-consuming task:

"[I]t's an incredibly individual thing and the skills the staff need is to be able to customise in a very person-centred way, around each volunteer and to provide the support in a way that they want it – not too much and not too little – and to help them to do their role in the way that's right for them at that point of time and to move on and develop if they want to, at the stage at which they're confident to do so. So it's not a straightforward thing for the staff to do and they say it takes quite a bit of their time as well."

(Project manager, Age UK Oxfordshire)

The projects had varying experiences with the use of volunteers as the projects matured. Some, like Westbank, developed and maintained a volunteer base without too much difficulty. The project staff learned that it was important to have designed different levels of volunteering commitment, which ranged from short-term, time-limited contact for people who were still working but keen to help, to more time-intensive, open-ended befriending roles for people with more time on their hands. Recruiting and targeting younger age groups was more complex for other projects. BRC Derbyshire found that younger professionals were keen to help with emergency first-aid roles associated with the charity, because they could contribute to future career paths. But the roles where volunteers were used to support independent living were more problematic:

"[F]or us... to get volunteers, it's particularly difficult. ... independent living, where people might get into becom[ing] a support worker as a volunteer... there's no real career progression from that to then go and become a paid support worker on minimum or living wage. And it doesn't really go anywhere from there, compared to another project, which might pitch it more as a befriending role with less emphasis on the person-centred care plan and the support worker role that we did, they're more likely to attract volunteers..."

(Project manager, BRC Derbyshire)

Even when projects recruited large numbers of volunteers initially, they found that some drifted away, leaving a core group who committed a lot of time. This frequent turnover of volunteers meant that the projects had to constantly recruit and train new volunteers:

"So we did get the numbers, but I would say, over time, what's happened is we've got a core group of really, really good volunteers who have got incredibly relevant experience, commit a lot of time and are really brilliant and are now working quite independently."

(Project manager, Age UK Oxfordshire)

All the project sites described needing to maintain active supervision and support. Volunteers were described as often having their own “agenda”, which was what had motivated them into volunteering but could bring different ideas on how the project should work: “Sometimes, you can have volunteers who almost feel that they know better.” This meant that project staff needed to invest time into managing volunteers. One staff member described volunteers as “getting as much out of the project as clients” and that one of the main benefits of volunteering programmes was the community solidarity it nurtured:

“I have a real problem with the fact that there doesn’t seem to be a big-enough acknowledgement in the statutory sector that, actually, to run an effective volunteer-based service, you need to have sufficient paid staff to support them, provide the training and monitor them.”

(Project manager, Age UK South Lakeland)

Specific challenges for the community-based services

All of the projects relied on the statutory sector for their referrals to a varying degree, and relationships needed to be established quickly as the projects started up. Interviews with the project staff and managers revealed some common early challenges about the experience of getting referrals into the services. The immediate problem for the community services was to find people in the community who might benefit best from the services and encourage a broad range of professionals to use a new service.

Many projects saw local GP practices as an important source of referrals. Projects described a mixed experience here, particularly in getting access to lists held by GPs under Directly Enhanced Services contracts identifying the most vulnerable 2 per cent of their populations.

Westbank had originally planned to tap into lists of patients identified by risk stratification tools in use by local commissioners. The project lead observed that, although these tools were available to GPs, they were not always used, depriving the project of a potential source of referrals that fitted the criteria for the intervention:

“They say, ‘I just know these patients off the top of my head, I could name you a hundred of my patients who would meet this criteria’, so you say, ‘Well, ok, could you do that?’ and they’ll say, ‘Yes, but who is going to do that piece of work and it’s extra work for me’.”

(Project manager, Westbank)

The same project reported that groups of GP practices, in conjunction with multi-disciplinary complex care teams, were making use of lists generated by a commissioning intelligence tool provided by the commissioners. While many of the patients on this list qualified for intensive packages of care and were unsuitable for the additional volunteer-led support, there were patients at the lower and medium margins who might have benefited from the service. As a result, the project team worked to make complex care teams aware of the new service. Over time, local GPs gradually became more familiar with the service as well, helped by demonstrating a model of referrals with a large GP practice in one of their areas, which was then taken back to the Clinical Cabinet of all GPs to demonstrate how it could work. The project also found that contact with practice managers rather than with GPs could be effective in unlocking access to GP practices.

Age UK Oxfordshire had counted on getting access to the GPs’ lists of high-risk patients, but found early on that “the GPs are not currently sharing that information

with anyone else”. So the project decided instead to use the knowledge of the community health, paramedic and social care workers. This process was helped by the structure of the Age UK Oxfordshire project, which placed community networkers (Age UK staff) with integrated community health teams made up of occupational therapists, district nurses and other community health professionals. Working in the same office and team as health professionals facilitated the sharing of information and the referral process. As knowledge of the service grew, GPs gradually came on board, and became an important source of referrals:

“We didn’t do as much promoting with GPs at the outset as we should have done. And we’ve done quite a bit of that more recently. And the feedback from one of my networkers this week was that the referrals she’s had through from GPs have been really, really good. So she has the feeling that the GPs really know their patients. They’ve had the longer-term involvement and they tend to really understand when somebody’s needs are more about their lifestyle and they really, truly are socially isolated.”

(Project manager, Age UK Oxfordshire)

In Age UK Cornwall, the project manager described a not dissimilar experience. In the case of the Living Well programme, the project had expected GP practices to identify potential service users partly through the use of a specific frailty screening tool, a short-form version of the Comprehensive Geriatric Assessment (CGA). Adoption and use of this tool was not consistent across GP practices:

“It’s the old story, GPs, it’s like herding cats, isn’t it? Some people recognise the clinical benefit of the short CGA, some people’s response is, ‘Yes, we’ll do it, but you’ve got to pay us’, and some people’s response is, ‘Ooh, I’m just too busy’, but I wouldn’t say that that was by practice really. Actually in some practices you’ll have some really innovative, forward-thinking GPs that recognise it and within the same practice you’ll have other people that won’t change. It’s the old story about getting the early adopters.”

(Project manager, Age UK Cornwall)

This reflects an experience common to all the projects – the tendency to underestimate the time needed to get themselves known across the health and care system:

“So I think we were a little naïve at how quickly we would be able to get accepted within hospital settings. Although our project, from a very early stage, wasn’t dependent on referrals from hospital – that was a ‘nice to have’ – it was GPs, social workers etcetera. And, again, that has taken longer than we’d hoped to build up but, now, people are definitely referring into us.”

(Project manager, Age UK South Lakeland)

Specific challenges for the hospital discharge services

In theory, the presence of people on an inpatient ward provided a contained pool of potential users, but in practice, getting access to the right people and access to the wards more generally was a big challenge. The project manager for the BRC project in Derbyshire also reflected that they had underestimated the challenges, and experienced push-back from the hospital, despite buy-in from senior managers: “Who are you, Red Cross Home from Hospital to turn up and think you can just walk in and start working with us?” (project manager, BRC Derbyshire).

Some projects experienced problems getting access to NHS information technology systems and honorary contracts. But even when logistical challenges had been overcome, project staff needed to invest time with NHS staff to find the best way of working together, to ensure that they were not making the system more complicated nor that the service was overlapping with other initiatives that had been set up to address the same problems.

“[W]e’re fortunate that [the project has] an office in the [hospital] and you’ve got [the project manager] there every day. So she’s actually walking the wards, talking face to face...”

(Commissioner, Leicester)

“[I]t really was ground up and we start going into the [hospital] and doing the ward walks... it was through patients and through front-line health care professionals that their feedback has filtered it higher up. Top senior management were for it, front-line practitioners became for it and both of those combined just ended up persuading the middle management.”

(Project manager, BRC Derbyshire)

Projects found that it was essential to have a member of staff physically present on the ward at some point during the working week. In some areas, project staff would get invited to a weekly board round about patients. At this meeting, hospital staff would highlight who they thought could benefit from an intervention and project staff could also make suggestions about services that might be suitable. It was through such weekly discussions that NHS staff became more aware of what projects could offer, and the project services started to become part of the system.

“So I guess up till Christmas itself, we were getting up, getting going, people getting the hang of who to refer to us, not always getting the right kind of referrals, not always getting enough referrals from the right places, but just working on it: feeding back to people, talking about case examples and, ourselves, learning what worked, what didn’t work and trying to reflect that back. And, really, since Christmas, onwards, it’s felt as though we were getting into our stride and just building up for numbers... . But we are now starting to get absolutely as many referrals as we can cope with and we’re needing to think about how we will do a bit more triaging...”

(Project manager, Age UK Oxfordshire)

NHS staff who were interviewed said that once the projects had become better known, patients who could benefit from referral were being identified as soon as they came on the ward. This meant that patients would be introduced to the project while on the ward, assessments could be started and services planned before discharge. Referrals could also be made during the week by telephone, which worked well once relationships had been established. Interviews with NHS staff in Westbank confirmed the importance of having the regular physical presence of the project staff, which kept the idea of referring to voluntary sector services at the forefront of their mind. NHS staff in other areas also valued the opportunity to discuss a patient’s complex needs:

“We would sit down and we would talk about the referrals that we had in mind... If there were particularly complex issues she might obviously give us some advice in some of the areas that they might be able to help on. Or that she thought yes they sound appropriate or no they don't sound appropriate or it sounds like it needs to be more professional input or, so things like that...”

(Occupational therapist, Age UK South Lakeland)

It was also important that there was continuous promotion of what the projects offered, so that people knew when it was appropriate to make a referral. Some interviewees observed that it was very difficult for statutory staff to keep up to date with all the initiatives that were available, particularly if they turned out to be short-lived.

“[W]hat we hear all the time from GPs and from hospital staff is that, having for years wished there was more support, that, now that there is more support, it can feel, at the receiving end, like there's simply too many things being offered, where the distinctions aren't always clear, as to why you should choose one service over another. And sometimes they complain about, 'It all sounds a little bit similar.'”

(Commissioner, Leicestershire)

One of the achievements of projects was functioning as a single point of access for voluntary sector services. This meant that NHS staff could refer to the project and the project would signpost clients to the relevant, locally available services, without NHS staff having to work out which schemes were still operating and what the criteria of the referral might be:

“And that was the thing that really appealed... both from the GP perspective and from the secondary care perspective, that there was a single point of contact; there was a number that they called and we would sort out, from that, where this referral needed to go.”

(Project manager, Westbank)

Publicity and clarity about what projects offered was even more important where there were shifts, where there was high staff turnover within the NHS and social care and where locum staff were being used. This meant that the projects needed to be continuously publicising themselves: “[T]hey all have to be all re-acquainted, if you like – or acquainted for the first time – with the range of services available out in the community. So that's an ongoing slog really, to get the numbers through” (commissioner, Leicester).

Project staff commented that building relationships and publicising their offering was time consuming, and there were additional costs associated with having a physical presence in the hospital environment, such as office rental costs. It was suggested that a longer set-up or lead-in period for such projects would have been useful so that stakeholders could be engaged early on and practicalities could be arranged. Interviewees felt that the projects only had a short time period in which to prove themselves to commissioners to assure future funding.

In addition to enabling practical needs to be met (such as computer access, storage or office space for the projects), the projects worked hard to build trust in their service, finding that parts of the NHS were not familiar with the voluntary sector: “I suppose it's just been [about] building trust and building relationships throughout the

hospital... it's taken a long time, people in the NHS can be very staid and it's quite a new and innovative service" (discharge sister, Derbyshire).

Enabling relationship building involved overcoming stereotypes of the voluntary sector and NHS staff reluctance to work with short-term projects. This required project staff to emphasise the professionalism of the service, being able to work to the same standards as public sector services, for instance in terms of training undertaken and DBS checking for staff and volunteers:

"Because there's always the slight risk, as a voluntary organisation, that you're seen as a bit slow and stick-in-the-mud and unprofessional. So we've tried to be hyper-professional in terms of showing that we can work in that kind of environment and meet expectations."

(Project manager, Age UK Oxfordshire)

NHS stakeholders were able to give examples of how project staff had done this:

"[H]er [project officer] level of interaction and understanding of what we're asking as well is very, very high. Also, she comes to the board round, which we discuss 20 patients [at, and] we're discussing wide, varying levels of detail, confidentiality, difficult conversations and she is always really professional within that environment, she just is a really credible person... . Even the small things, always immaculately dressed, she's always on time, she records things down in a really good way, she gives you feedback, when she says, 'I'll call you about that', she does. She goes and sees the patients we ask; it's not like we have to ask again."

(Hospital matron, Exeter)

The financial climate meant that a lot of services were being restructured and being put out to tender, so staff felt uncertain and therefore resistant to change. A recurring challenge mentioned was the need to reassure NHS staff that the projects did not threaten jobs and were there to help and not hinder: "Basically by proving what they were doing and proving that they weren't taking over anyone else's jobs and they weren't slowing down the process, and they were actually useful and helpful and took some of the burden away, diffused situations" (commissioner, Oxford).

The projects also reported that they were learning how best to match the time that volunteers had available with the complexity of the service to be provided. For example, hospital discharge processes were proving to be unpredictable at times, which had implications for volunteers who were only available for limited time slots. Team members from the project in Westbank, which includes a supported discharge element, described a case where the process for discharging a patient was marked by sudden changes of plans, leading to a five-hour delay between the promised and actual discharge. If this pattern was repeated, the team noted a potential problem for their time-limited volunteers. In this particular case, the staff team members stepped in: "If we'd thrown volunteers into it cold, I think we'd have ended up with some quite disgruntled volunteers" (project manager, Westbank).

The irregular availability of volunteers was a key theme brought up by all the project sites and this needed to be factored into the planning. For example, one project manager noted that: "[T]here are times when everyone goes on holiday and there are no volunteers" (project manager, Age UK Oxfordshire).

Finally, at the time of the interviews, the projects in hospital were reaching full capacity and they were exploring the ways to manage the demand.

Specific challenges for the A&E-based service

The only project that worked in an A&E department was the Age UK Leeds arm of the Leeds service. There were initial logistical problems getting the volunteers into the department, which required considerable persistence on the part of the project manager, such as setting up honorary contracts and gaining access to computer systems and a telephone line, because the trust was not used to dealing with the voluntary sector, and had no dedicated lead.

“And in the end, all I could do was camp outside directors’ offices and say, ‘Well, I’m sorry, but I’ve spoken to 14 of your staff; none of them know whose decision it is so I’ll have to come and annoy you now.’ Because this was a whole different way of working; it was unclear who could make the decisions needed in the trust. I regularly had to escalate the requests to director level to get results.”

(Project manager, Age UK Leeds)

Once these issues were resolved, the project manager described a welcoming response from the teams based in the hospital. They were given access to the electronic database, which captured basic information about the health conditions, reasons for admission and (sometimes) social circumstances for each patient in A&E. This allowed them to make the case for how they could target their services at the right person:

“If they’ve had a heart attack, you know they’re not going to be discharged, so you wouldn’t approach those. If somebody’s had a minor fall or they have just come in feeling unwell, they could be the ones that we would probably target more.”

(Project manager, Age UK Leeds)

Leeds also reported that the discharge process was, on occasions, complex and unpredictable. In some cases, older patients awaiting test results could be moved to other parts of the hospital (particularly if their tests could not be done within the four-hour waiting target). If this happened, the patient was no longer visible on the computer system used in A&E. The project therefore began working in the medical assessment unit where patients were taken to wait for tests before deciding whether admission was required, although it did sometimes mean that project staff were not always visible: “I think the challenge has been around sometimes how many bodies they’ve actually got in the department, because there’s usually only two of them on... . And sometimes it’s not enough” (matron, Leeds).

The project staff described a huge clinical demand compounded by a lack of bed capacity, A&E being at a standstill and clinical time being consumed in the management of a bed crisis. This had implications for how volunteers could be used in the A&E service alongside project staff: “We had to be reliable, and we had to go above and beyond, and we had to show them that we could respond to the demand that they had, and not just say, ‘Oh well, I’ve no staff, I can’t help you today’” (project manager, Age UK Leeds).

The project found that students often came forward to volunteer (and often made excellent volunteers), but exams and the need for paid work in vacations often made this group a more short-term and irregular source of volunteers. The project learned that it needed to balance its portfolio with older, retired volunteers with more time on their hands, and with a greater probability of turning up:

“For the whole project, there was about 125 [volunteers]. But, to be honest, a lot of them just weren’t available when needed... I think services can definitely be enhanced by volunteers but I think it’s unrealistic to think it can be dependent on volunteers.”
(Project manager, Age UK Leeds)

Interviews with NHS staff confirmed the value of older, more experienced volunteers. Recent retirees from health and social care services were mentioned as a very useful group of volunteers (in terms of appropriate experience), as some service users had very complex needs:

“[W]hen volunteers are coming in to A&E they’re not just seeing those patients, you know, they’re seeing all the other patients in that environment, and I think we’ve had a couple of reports that a couple of them have been a bit put off by it, you know, if you’ve got a young, screaming, shouting mental health patient in the cubicle next to them, they’re exposed to that as well. I think that’s quite a big thing for somebody very young... It’s about having the right people, and I think sometimes it’s just about people that have had a bit more life experience and then can relate, you know, sometimes relating to older people a bit better.”
(Matron, Leeds)

A common recurring theme across all project sites was the challenge of finding and retaining high-quality staff who were willing to work on short-term projects, and as part of their expected role work unsociable hours and weekends. The pressures were felt acutely in the A&E service, where good staff had become crucial for the smooth running of the service:

“And the short-termism of the funding is an absolute nightmare because it leads to staff turnover. For me I’ve done nothing but recruitments and panels and inductions and people leaving. Within three months of them coming, quite often, people have left because of the hours and the pressure.”
(Project manager, Age UK Leeds)

In the case of Leeds, as with many of the other projects, the energy of the project team paid off, in terms of how they became to be seen as a very valuable addition to a very pressurised part of the NHS:

“So now they see the voluntary sector as a whole in a completely different light. It was something that they were quite cynical about and thought, ‘Yes, you can come and help us make cups of tea in A&E’ when we started, to actually, now, we actually get consultants saying, ‘Well, what do you think? Can we get them home?’ So it’s a massive turnaround.” (Project manager, Age UK Leeds)

Further common challenges

Demonstrating responsiveness

The projects showed examples of being able to evolve to meet the needs of the wider system, and that they could enact change at a fast pace. Given the extent of pressure on the health and social care system, it is likely that an ability to evolve will be key to any

ongoing role of the projects, to meet both increasing demand as well as demand from new areas. One example of a project adapting during the course of the funding came from BRC Derbyshire, where an initial plan to base themselves in A&E to assist with discharge was abandoned in favour of working on the inpatient wards:

“[W]e took feedback from the hospital quite early on that it was the blockages on the wards that was the real problem and freeing up beds, because people coming in to A&E... would usually come onto a ward as part of the flow through the hospital.”
(Project manager, BRC Derbyshire)

In Leeds, conversely, the project abandoned a community prevention arm of the project because it was ineffective, reassigning staff to other duties: “[B]asically, we just didn’t renew their contracts... . We spoke to them all, consulted with them; they fully understood that it wasn’t cost effective. They’d only had a handful of call-outs each, so it definitely wasn’t cost effective” (Project manager, Age UK Leeds).

This allowed the project to focus more fully on the A&E admission avoidance, but even this strand of the service had to change once it became obvious that the acute hospital had more complex processes for dealing with older patients than had been first thought. Many of the patients who might have benefited from Age UK’s service were being moved to a medical assessment unit rather than staying in A&E:

“... just because the four-hour target is incredibly challenging for all those people with complex needs. A&E don’t even expect to see them and get them in and out in four hours, to be honest. If there’s any tests to be run or any confusion or any medication needed, it’s not going to happen in those four hours. So they automatically go into an assessment unit.”
(Project manager, Age UK Leeds)

Another example of project evolution was in the use of an e-hub, initially designed for communication between voluntary sector organisations, being opened up to individuals who then used it to get information about events: “It [the e-hub] wasn’t designed, originally, for individuals but we realised that, actually, individuals are using it from feedback from partners and from people when we’re out talking to them” (project manager, Age UK South Lakeland).

A common thread throughout these examples was that the leaders of these voluntary sector projects needed to be constantly vigilant and willing to respond quickly to feedback from their statutory sector partners. It also meant that projects went out of their way to respond positively to all requests: “[W]e can often say yes where others will say no” (project officer, BRC Derbyshire).

Interviewees gave examples of where projects would assist people who perhaps did not fit their referral criteria, or who lived outside their designated catchment area. The projects were proud that their ethos was based on meeting the needs of service users rather than being bound by bureaucracy:

“[I]f we’ve got capacity, we will take that person home, it’s just a few miles outside of our technical boundary. Or we will take that person who’s a double amputee, who’s younger than what our pencilled-in criteria is, but that would be quite damaging mentally and culturally if we refuse that person...”
(Project manager, BRC Derbyshire)

The pressure to succeed and look for funding

Behind the projects' eagerness to be seen as flexible and responsive was an awareness that the funding from central government was temporary, and that the future of services would depend on them being recommissioned by local commissioners. We interviewed commissioners about the projects – many of whom were involved in steering or advisory groups – and it was striking that they were ambivalent about whether the projects were going to be able to produce measurable benefits within the timescales. They seemed to feel that the projects were the 'right thing to do' but needed sufficient evidence to justify funding. All the commissioners stressed the need for hard evidence of impact because clinical commissioning groups were often under financial pressure and reluctant to fund anything that did not show a potential for direct cost savings.

On the other hand, commissioners often sympathised with the challenges of measuring complex interventions over short timescales, with relatively small numbers, against a backdrop of continuous change in the local health and care system:

"[I]t is very difficult with the amount of transformational change going on. How can we pull out this one thing and say it made a difference?"

(Commissioner, Oxford)

"[T]he challenge is always directly conferring or assuming that it was that service, solely, that delivered that benefit. Because that's always a challenge for projects when you're working in a very complex system."

(Commissioner, Leeds)

"Has that person been discharged earlier because of this service or is it just because the acute hospital's toughening up or because there's other community services that are now more available? It's very hard to prove which element has had the impact."

(Commissioner, Leeds)

Commissioners also realised that some of the benefits from the interventions would not be felt or be appreciated for many years:

"It's the length of time that you might need to show the real benefits, is just my worry. Because, if you improve someone's wellbeing, the knock-on effects from that can be that they're more receptive to doing an exercise path, a bit more likely to become compliant with their medication, they're more likely to be receptive to the other public health messages and things and we're more likely to reduce the risks of depression and other illnesses. So all those sorts of gains, potentially, are going to be seen quite a long time down the path."

(GP and commissioner, Westbank)

For those running the projects, there was an awareness that they were navigating a complex web of financial incentives within the local health and social care system. For example, some projects were aware that the structure of the 'tariff' rules, which determine how much hospitals are paid per patient, meant that earlier discharges might not save commissioners any money:

“If somebody goes into hospital for a particular incapacity – such as a stroke or something like that – there’s a trim point that could be like, they’ve got to pay 15 days, anyway, the CCG [clinical commissioning group], for that person. If they come out before the 15 days, it doesn’t save any money for the CCG: they’ve already paid that tariff.”

(Project manager, Age UK Leeds)

Other projects spoke about similar challenges in pinning down which part of the system would realise potential savings from their services, with the suggestion that in some cases, these volunteer services were substituting for social care or relieving pressure on GP services, which are also funded for the most part centrally rather than via clinical commissioning groups.

Projects were all too aware that improving patient experience, even though it was stipulated as an outcome in the original project brief, was going to be insufficient to secure future funding in a difficult financial climate: “[I]f it comes out that we improve patient experience, that’s going to be nice, but I don’t think it’s going to be something that we’re going to have directors of commissioning banging on our door” (project manager, RVS Leicestershire).

A complicating factor locally was the presence of competition from other initiatives aiming to provide not dissimilar services. A number of the projects identified that there were local organisations offering similar services to them. As well as causing a challenge for people to know when to refer to a particular service, the projects then felt that they were in direct competition for funding: “[P]otentially occupying the same space, although, probably not in so far as it’s absolutely chargeable for, [it] offer[s] a degree of overlap with what [this service] offers in terms of personal care and shopping and befriending and so forth – and confidence building” (commissioner, Leicester).

One commissioner was also frustrated that sometimes new projects were set up locally without any consultation on how they fit alongside the existing offerings, which was seen as a waste.

7. Discussion

Chapters 1 to 6 have told the story and offered an analysis of the impact of the social action projects that received funding from the Reducing Winter Pressures Fund. All of the projects aimed in some way to improve the experience of and prospects for a vulnerable group of older people, and reduce the pressures on the NHS.

Our evaluation has left us with a mixed set of findings. On the one hand, the voices of the volunteers, project staff, the professionals working alongside the projects in the NHS and other services, and users, have told a story of services that have made an impact. There was a strong feeling that these services were helping to fill gaps – either in existing social support networks or in statutory service provision. For NHS staff, particularly those working in hospitals, these services at their best provided a responsive and much-needed way to meet the needs of people facing some sort of crisis in their lives, by providing practical help, reassurance and, above all, connection with other services and people, which might reduce their isolation.

On the other hand, our analysis of the hospital data trail of what then happened to the recipients of the services in the months that followed does not suggest that these schemes impacted on the use of NHS services in the way that was assumed.

The quantitative analyses did not reveal evidence of a reduction in emergency hospital admissions, or in costs of hospital care following referral to the social action projects. The one exception was the project based in an A&E department, which revealed a smaller number of admissions in the short run. In some cases, both hospital admissions and total hospital costs were greater post referral for the social action service recipients than for the control groups.

One explanation may be that our method for selecting controls fell short, limited as it was by the data available for individuals outside the projects. To select controls we relied entirely on national HES data. While we were able to select controls with similar disease and hospital contact histories (although not exactly similar), there may have been systematic differences between the groups in terms of other factors potentially connected to future use of hospital services. Such factors could have included housing status, social support networks, self-assessed health and so on, as well as the levels of use of other care services (primary care, social care). Had national data been available for some of these other elements, we may have selected very different control groups, and observed different results.

The findings may also reflect the timing of the evaluation. The projects had to put in place an expanded set of services in a very short period of time, and we have noted that some modified their services in response to the demand from referring partners throughout the period. To measure any effect post referral, we needed to allow a long-enough period of follow-up time. This was especially true for the community-based scheme referrals whose hospital contacts were relatively rare. However, the longer the follow-up time, the shorter was the referral period that we could include in our analyses.

Our response was to carry out our main analyses using a nine-month follow-up period, but only for those referred in the first six months of the schemes (October 2014 to March 2015 inclusive). There are two possible implications here. First, that our focus on the first six months of the schemes may have meant that our conclusions do not necessarily reflect the services offered by the end of the period. It was clear from the interviews that many of the projects had different challenges to face as they matured, and all experienced a degree of 'learning on the job'. Second, that a nine-month follow-up period may have been insufficient time in which to show measurable effects on hospital care. The insights we had into some of the help being offered – particularly for the community schemes (for example help with getting access to Attendance Allowance and other welfare benefits, and the time taken to build a person's confidence to reconnect with sources of support after lengthy periods of incapacity or isolation) – suggest that the benefits may well take some time to feed through. It is worth noting that many of those involved in the projects, including commissioners, felt that their impacts would be measurable only in the much longer term.

However, it is also possible that additional data or longer time periods would not have changed our results fundamentally. The projects were commissioned and designed on the assumption that a proportion of emergency admissions and readmissions to hospital can be averted by the sort of low-level social support supplied by these projects, and that hospital lengths of stay can be similarly impacted.

On this point, it is worth noting that the results from our analyses are largely consistent with previous evaluations that have used similarly robust methods. These include our own evaluations of a hospital-to-home scheme run by the British Red Cross (Georghiou and Steventon, 2014) and a range of complex community-based interventions that used a mixture of professional and voluntary sector staff (Bardsley and others, 2013). Even more clinically focused interventions (including case management, telecare and specialist clinics) have also failed to make a measurable impact on emergency admissions (and readmissions) to hospital (Purdy and others, 2012).

It is also important to note that our results were consistent across the areas in terms of total hospital costs after referral: the three community-based schemes all showed higher costs with respect to controls, while the five hospital discharge schemes showed no difference with respect to controls. The selection of control areas was noted as a potential limitation of our approach (because of uncertainty about services in those areas, and even in terms of differences in the coding of health records) – but the consistency of the results goes some way to tempering concerns about how appropriate individual areas were for use as controls.

In our 2013 research summary on evaluating integrated and community-based care (Bardsley and others, 2013), we drew attention to several factors that were important when evaluating complex schemes. One was the difficulty of targeting interventions at those most likely to benefit, and in our interviews for this study we heard about the challenges of targeting the services at the right sort of people, whose health problems had not yet become too complex and therefore could benefit from being reconnected with sources of support to improve independence and reduce isolation.

Another challenge highlighted in the research summary was that of understanding how interventions were implemented in practice. What is particularly striking in this study is the rich mix of the services on offer – ranging from long-term befriending to

supporting anxious patients in a busy emergency department. There was very large variation both in the types of services and in the intensity of services that individuals received even within individual project sites. Many of these were the result of an underlying principle guiding the schemes – that services should be built around the needs and wishes of the older person themselves – but this adds to the complexity of the evaluation.

It is also possible that these projects uncovered unmet need, which was then reflected in more intensive use of hospital services in the subsequent months. This is consistent with a theme that emerged in some of the interviews with volunteers and staff – the tendency of some older people to ‘soldier on’ and not ask for help until some sort of crisis or turning point. The projects focused on encouraging individuals to articulate their needs and accept help, and this may well have been accompanied by an increased focus on their physical needs, once they were then known to the wider health and care system. The wider health and care system itself has also been subject to a great deal of change over the period (see Chapter 1), and there have been well-documented pressures on primary care and community services, which may have played an important, but unmeasured, role in the outcome of these projects.

Given the findings of this study, and those that have gone before it, a question arises about whether the benefits of these sorts of interventions can ever be fully captured solely using hospital-based data and conceptualising reduced or shortened admissions as a key marker of success. Even if the projects had been able to target precisely the right intervention at precisely the right person, a hospital admission may still have been medically necessary. We do not know whether these interventions reduced pressure on GP services, or district nurses, or kept people out of long-term residential care: all of these factors were unmeasured. Our interviews flagged up important potential benefits to staff in the NHS in terms of reduced hassle and potentially freeing up time for clinical activities, but again, these were not measured.

Conclusions and lessons for the future

Towards the end of the evaluation period, it was clear that the future local commissioners of these projects were looking for concrete evidence that they were ‘effective’ in reducing pressure on hospitals. Judged against the narrow measures of success laid down at the outset – reduced admissions and shortened lengths of stay – the answer would appear to be that they were not, with the possible exception of the project based in the A&E department in Leeds in the short term.

Nevertheless, this evaluation has shown that the answer to the question ‘did this work?’ needs to be a more nuanced one: these projects delivered services that were valued by volunteers, statutory sector staff and users. One implication of this work is that the objectives set by commissioners (both national and local) were misaligned with the value arising from these services.

This evaluation has, nonetheless, generated lessons about how voluntary sector projects can gear up to work effectively with one of the most pressured parts of the NHS, and provided valuable lessons in turn for NHS staff and commissioners to get the best out of social action projects of this kind. In the next section we set out what might be considered important lessons arising from the evaluation.

Lessons arising from this evaluation

For the voluntary sector

- Establishing schemes of this kind involves persistence and astute leadership to build good relations with NHS partners. Persistence is needed particularly in the set-up phase, if access to NHS information technology systems, wards and GP practices is necessary. Leaders of projects will need to get buy-in from senior managers but will also need to invest time with front-line staff in order for a service to be perceived as reliable and valuable.
- Those leading voluntary sector projects need to be ready to work with their NHS and social care counterparts, in order to overcome any concerns about increased workload, reliability and attitudes to risk in relation to vulnerable patients, or concerns about job roles that might lie behind initial resistance. Regular feedback to professionals on the outcomes of referred patients seems to be a good strategy to assist with this.
- Services need to be established around a reliable, well-trained body of volunteers who can be matched to tasks in a way that both meets their reasons for volunteering and is of value to the programme. They also have to be underpinned by recruitment and retention of high-quality staff who are adept at navigating the NHS and social care system.

For commissioners and NHS providers

- If well run, these projects can free up time for NHS and social care staff to focus on their core activities and, in theory, be more productive. They can also support vulnerable patients while in emergency departments and inpatient wards, thereby improving patient satisfaction. They can add additional dimensions of support to primary care, and community-based health and care staff, increasing their capacity to respond to the needs of older people in a holistic way.
- Projects such as these can increase the awareness of NHS staff, especially GPs and hospital clinicians, of the extent of voluntary sector services in their community, and if there is a single point of contact, can increase the confidence of clinicians that there are viable alternatives to admission.
- Commissioners need to be realistic about the impact that these projects will have on both the use of statutory services and potential savings. Future metrics will need to be broader, to capture the benefits for NHS and social care staff and other parts of the system, for example admissions to long-term care, and workload in primary and community care.
- Above all, these sorts of initiatives need to be given time to succeed: short-term funding increases the prospect of failure and reinforces perceptions in the statutory sector that the voluntary sector is unreliable.

The enthusiasm of people to volunteer needs to be harnessed, but it is not cost free. We would endorse the conclusions of a recent survey of volunteering by The King's Fund (Naylor and others, 2013), that the services that volunteers can provide in projects such as those we have evaluated in this report need to be reconceptualised as a key dimension of quality for patients rather than as a means to reduce costs, and that commissioners, and the NHS more widely, need to be more strategic in their approach to harnessing the value of social action.

Appendix A: Exclusions from our hospital data analysis

Table A.1 summarises the exclusions made from our initial cohort to get to our analysis cohort, and also highlights the group referred before 1 April 2015 (this is a group we were able to follow for nine months post referral).

Relatively small groups were excluded where we judged there would be a disproportionate effort to find matched controls. These included:

- people under the age of 60 (and a small number of no known age)
- those referred to a hospital referral project from a community trust: Derbyshire Community Health Services (at least 130 people), Leicestershire Partnership Trust (at least 124 people) and Oxford Health Trust (at least 33 people)
- those referred to a hospital referral project where their hospital stay or contact was not an unplanned inpatient stay.

We also excluded those referred to hospital-based schemes where we could not find the individual in hospital within seven days of the recorded referral.

Due to a lack of follow-up data, we finally excluded any referrals to the hospital schemes on or after 1 July 2015 and community referrals on or after 1 April 2015.

Table A.1: Exclusion of individuals in the hospital data analysis

	Project site*							
	All	CO	DB	EX	LC	LD	OX	SL
All records received from project sites	8,925	506	1,131	612	1,449	2,463	757	2,007
People with first referrals between October 2014 and June 2015 inclusive	7,062	487	1,011	479	1,155	2,091	597	1,242
Successful linkage to HES data	6,273	–	960	447	1,127	2,083	560	1,096
Aged 60 or over	5,945	–	848	447	1,078	2,046	536	990
Received a service	5,537	–	848	447	670	2,046	536	990
Final analysis cohort								
Hospital schemes: person found in acute trust, as emergency inpatient (or A&E visit) near expected date;	3,919	–	543	320	423	1,585	373	675
community schemes: referral before 1 April 2015								
Important analysis cohort								
Referrals before 1 April 2015	2,831	–	248	248	286	1,088	286	675

* CO = Age UK Cornwall, DB = BRC Derbyshire, EX = Westbank (Exeter), LC = RVS Leicestershire, LD = Leeds service, OX = Age UK Oxfordshire and SL = Age UK South Lakeland.

Appendix B: Finding matched controls

Community-based schemes

Using HES data from April 2008 to March 2014, we created a preparatory file to describe the hospital contact history of all people in England aged 60 or over (at least those who had used a hospital in this time). For every hospital contact, we recorded the Lower Super Output Area (LSOA) of residence at the contact date. We also recorded the person's year of birth and sex. Where a person was noted as having died in hospital during an inpatient spell, the date of death was recorded.

The voluntary schemes being evaluated referred service users during the time period 1 October 2014 to the end of June 2015.

Our aim was to use the data described above to create a pseudo-population file of the English population aged 60+ at the beginning of every month during this period. This population file gave us an estimate of the age and sex of each person, as well as where they lived (by LSOA), and as such it formed the starting pool of potential matches.

Pool of possible control individuals

In undertaking the data linkage stage (that is, linking service users' personal identifiers to pseudonymised HES Patient IDs), the HSCIC also provided us with the LSOAs of residence for each of the service recipients. Table B.1 shows the local authorities of residence of those referred to community schemes (only the most common local authority areas are shown). Almost all of Age UK South Lakeland's service users were resident in South Lakeland local authority. Half of Westbank's users lived in Exeter. Age UK Oxfordshire's users were relatively evenly split across five local authority areas.

Table B.1: Local authority areas of residence of service users referred to community-based schemes

Project site	Local authority code	Local authority name	% of project site's community cohort
Westbank	18UC	Exeter	53%
	18UB	East Devon	24%
	18UH	Teignbridge	21%
Age UK Oxfordshire	38UC	Oxford	22%
	38UF	West Oxfordshire	21%
	38UD	South Oxfordshire	20%
	38UB	Cherwell	19%
	38UE	Vale of White Horse	14%
Age UK South Lakeland	16UG	South Lakeland	99%

For each of the local authority areas shown in Table B.1, we identified the *most similar* local authority as defined by the Office for National Statistics (see Table B.2) (Office for National Statistics, 2011). We allowed only residents of these nine similar areas to be possible controls for the service recipients – with the additional limitation that controls for South Lakeland service recipients were selected only from the list of residents of North Devon and so on. This approach helped to control for some area characteristics, for example the rural or urban nature of the areas and factors associated with deprivation.

Table B.2: Selected control areas of residence

Site	Service recipient areas of residence		Selected similar areas of residence		
	Local authority code	Local authority name	Local authority code	Local authority name	Level of similarity*
Westbank	18UC	Exeter	30UH	Lancaster	Very
	18UB	East Devon	19UH	West Dorset	Extremely
	18UH	Teignbridge	40UE	Taunton Deane	Extremely
Age UK Oxfordshire	38UC	Oxford	12UB	Cambridge	Extremely
	38UF	West Oxfordshire	00HY	Wiltshire	Extremely
	38UD	South Oxfordshire	00MB	West Berkshire	Extremely
	38UB	Cherwell	12UE	Huntingdonshire	Extremely
	38UE	Vale of White Horse	24UC	East Hampshire	Extremely
Age UK South Lakeland	16UG	South Lakeland	18UE	North Devon	Very

* As defined by the Office for National Statistics, 2011.

Matching procedure

The following points describe the steps undertaken to match people referred during October 2014. This approach was carried out for each of the nine months from October 2014 to June 2015.

- From our preparatory pseudo-population file, we extracted a random 50 per cent sample of all people aged 60+ who were resident in the selected similar areas on 1 October 2014 (N = 247,018).
- We added to this the records of those who were actually referred to the community-based schemes during October 2014 (N = 148).
- For both sets of individuals, a large number of variables were calculated to describe their history of hospital use from the HES data in the two years (720 days) prior to 1 October 2014. This included counts of admissions and other visits, and recorded long-term and other diseases.

- A large subset of these variables was used to calculate a risk of emergency admission score for each individual (see Box B.1). This score was a prediction of the likelihood of an emergency admission in the 360 days after 1 October 2014.

Box B.1: Risk score for use in community-based schemes

Using HES datasets from April 2008, we built a national (England) member file of people aged 55+ who were not known to have died in hospital before April 2012.

We split this dataset into two random – 10 per cent – samples of 1.4 million people each. A multivariate logistic regression model was fitted using one of the samples. We modelled the event of *at least one emergency admission in the future year* (the dependent variable), using a large range of independent variables derived from the HES data describing each person (age, sex, disease history) and the person's history of past hospital activity. This was similar in approach to that taken by ourselves and others over the past decade (Georghiou and others, 2013).

A separate model was built for each of the months from 1 April 2012 to 1 April 2013, to give us a set of model coefficients that might be appropriate to any specific month of the year.

The models produced were validated on the second 10 per cent sample of people. This confirmed that the models produced were not overfitting, and were appropriate to use in new samples.

The performance of the model produced (see Table B.3) was comparable to other community-based prediction models available that use only hospital data (Georghiou and others, 2013).

Table B.3: Model performance – positive predictive values (PPVs) and average number of future emergency admissions for selected risk bands (C statistic = 0.738), over 60s

Risk band	% admitted within year (PPV)	Future year emergency admissions per person
Top 0.5%	65.9%	1.98
Top 1%	60.6%	1.62
Top 2%	55.2%	1.32
Top 5%	46.6%	0.98
Risk deciles (N = 241,946 each band)	% admitted within year (PPV within decile band)	Future year emergency admissions per person (within band)
Risk decile 1 (highest risk)	38.9%	0.75
Risk decile 2	22.4%	0.35
Risk decile 3	15.5%	0.22
Risk decile 4	12.5%	0.18
Risk decile 5	10.1%	0.14
Risk decile 6	8.1%	0.11
Risk decile 7	6.8%	0.09
Risk decile 8	5.6%	0.07
Risk decile 9	4.8%	0.06
Risk decile 10 (lowest risk)	3.9%	0.05

- For each individual, the variables shown in Table B.4 were exported into a smaller dataset.

Table B.4: Matching variables		
Variable	Description	Variable type
xhesid	Person identifier (pseudonymised)	Identifier
Intervention	Intervention group = 1, or possible control = 0	To distinguish between the two groups – intervention/control
agebnd	Five-year age bands: 60–64, ..., 90+	
siteN	EX, OX or SL (including possible controls)	Matching variables: exact match
sex	Male or female	
score	Logit of future emergency admission risk score	Matching variable: very close match
age	Age in years	
IMD_SCORE	2010 Index of Multiple Deprivation (IMD) score of LSOA of residence	
EMADM_N_000030	N emergency admissions in prior 30 days	
EMADM_N_030060	N emergency admissions in prior 30 to 60 days	
EMADM_N_060090	N emergency admissions in prior 60 to 90 days	
EMADM_N_000090	N emergency admissions in prior 90 days	
EMADM_N_000360	N emergency admissions in prior 360 days	
NEMADM_N_000030	N elective admissions in prior 30 days	
NEMADM_N_030060	N elective admissions in prior 30 to 60 days	
ELADM_N_000090	N elective admissions in prior 90 days	
DX_Diabetes	Diagnosis of diabetes in prior 720 days	
DX_Hyperten	Diagnosis of hypertension in prior 720 days	
DX_COPD	Diagnosis of COPD in prior 720 days	Other matching variables
DX_Fall	Diagnosis of fall in prior 720 days	
DX_Ment	Diagnosis of mental ill health in prior 720 days	
DX_Anem	Diagnosis of anaemia in prior 720 days	
DX_CVD	Diagnosis of cardiovascular disease in prior 720 days	
DX_CTDRHART	Diagnosis of connective tissue disease/rheumatoid arthritis in prior 720 days	
DX_RenalFail	Diagnosis of renal failure in prior 720 days	
DX_RespInf	Diagnosis of respiratory infection in prior 720 days	
IP_ACS_3090	N admissions for ambulatory care sensitive conditions in prior 30 to 90 days	
CH_INDEX	Charlson index score	
ALLAE_N_000030	N A&E visits in prior 30 days	
AEvis_000090	N A&E visits in prior 90 days	
ALLOP_N_000030	N outpatient attendances in prior 30 days	
OP_ALL_000360	N outpatient attendances in prior 360 days	

- We used the GenMatch genetic matching program in R to find controls (Diamond and Sekhon, 2012). People were matched exactly to controls of the same age band and sex and in terms of which of the three sites they belonged to (either as people referred to the schemes or as potential controls), and the procedure was forced to match very closely on the logit of the risk score. All other variables we attempted to match on are given in Table B.4. Matches took place with replacement (so a control individual could be chosen as the best match for two or more intervention individuals). Note that this was our final list of matching variables after a small number of iterations.
- The outcome of the GenMatch program was a list of 148 most closely matching individuals, one for each of the intervention individuals.

This was repeated eight times for each of the subsequent months, so that we finally had one match for each of the community-referred service recipients between October 2014 and June 2015.

Table B.5: Mean values of important characteristic variables for the intervention group, potential controls and selected controls (standardised differences are also shown)

Variable	Description	Intervention group	Potential controls		Selected controls	
		N = 1,565	N = 2,217,358	Standardised difference	N = 1,565	Standardised difference
		Mean	Mean		Mean	Standardised difference
Female	Sex = female	0.63	0.43	40.4%	0.63	0.0%
age	Age (year)	79.92	74.58	56.3%	79.85	0.7%
agebnd60	Aged 60–64	0.07	0.18	32.4%	0.07	0.0%
agebnd65	Aged 65–69	0.09	0.20	32.0%	0.09	0.0%
agebnd70	Aged 70–74	0.10	0.17	20.5%	0.10	0.0%
agebnd75	Aged 75–79	0.18	0.15	9.3%	0.18	0.0%
agebnd80	Aged 80–84	0.22	0.13	25.6%	0.22	0.0%
agebnd85	Aged 85–89	0.21	0.10	32.8%	0.21	0.0%
agebnd90	Aged 90 +	0.13	0.09	12.3%	0.13	0.0%
IMD1	IMD decile 1 (most deprived)	0.00	0.01	9.2%	0.01	3.6%
IMD2	IMD decile 2	0.02	0.02	1.9%	0.01	7.3%
IMD3	IMD decile 3	0.03	0.04	1.7%	0.03	0.4%
IMD4	IMD decile 4	0.05	0.06	7.2%	0.07	10.1%
IMD5	IMD decile 5	0.09	0.09	1.2%	0.09	2.7%
IMD6	IMD decile 6	0.16	0.15	3.4%	0.19	9.9%
IMD7	IMD decile 7	0.19	0.14	12.9%	0.17	5.4%
IMD8	IMD decile 8	0.18	0.16	4.8%	0.25	18.0%
IMD9	IMD decile 9	0.18	0.19	4.1%	0.12	14.2%

IMD10	IMD decile 10 (least deprived)	0.10	0.14	12.2%	0.05	18.3%
DEC_HIRISK_1	Risk decile 1 (highest risk)	0.35	0.06	77.2%	0.35	0.3%
DEC_HIRISK_2	Risk decile 2	0.21	0.07	41.9%	0.21	0.3%
DEC_HIRISK_3	Risk decile 3	0.12	0.11	3.3%	0.12	0.2%
DEC_HIRISK_4	Risk decile 4	0.11	0.15	11.5%	0.11	0.0%
DEC_HIRISK_5	Risk decile 5	0.07	0.09	10.9%	0.07	1.0%
DEC_HIRISK_6	Risk decile 6	0.04	0.11	24.5%	0.04	0.6%
DEC_HIRISK_7	Risk decile 7	0.03	0.11	30.1%	0.04	2.1%
DEC_HIRISK_8	Risk decile 8	0.03	0.08	21.9%	0.03	1.9%
DEC_HIRISK_9	Risk decile 9	0.02	0.11	36.8%	0.02	1.3%
DEC_HIRISK_10	Risk decile 10 (lowest risk)	0.02	0.12	39.6%	0.02	0.5%
EMADM_N_000360	N emergency admissions prior year	0.56	0.12	56.1%	0.50	6.0%
ELADM_N_000360	N elective admissions prior year	0.12	0.05	23.2%	0.11	3.2%
OP_ALL_000360	N outpatient attendances prior year	4.47	1.89	56.3%	4.60	2.5%
AEVIS_000360	N A&E visits prior year	0.77	0.20	61.7%	0.75	1.7%
DX_Hyperten	Hypertension diagnosis (prior 2 years)	0.35	0.13	53.6%	0.37	3.3%
DX_Injury	Injury diagnosis (prior 2 years)	0.19	0.05	45.0%	0.18	3.9%
DX_Ment	Mental ill health diagnosis (prior 2 years)	0.19	0.05	43.4%	0.16	8.3%
DX_PVD	Peripheral vascular diagnosis (prior 2 years)	0.15	0.03	43.8%	0.14	3.8%
DX_AngIschHD	Angina/ischaemic heart disease diagnosis (prior 2 years)	0.15	0.05	32.4%	0.18	8.8%
DX_AtrlFig	Atrial fibrillation diagnosis (prior 2 years)	0.14	0.04	34.5%	0.16	5.6%
DX_Diabetes	Diabetes diagnosis (prior 2 years)	0.12	0.04	28.5%	0.11	1.6%
DX_Fall	Fall diagnosis (prior 2 years)	0.12	0.03	36.5%	0.09	9.7%

DX_Cancer	Cancer diagnosis (prior 2 years)	0.10	0.05	22.0%	0.10	1.1%
DX_COPD	COPD diagnosis (prior 2 years)	0.09	0.02	28.5%	0.08	1.6%
DX_CVD	Cardiovascular diagnosis (prior 2 years)	0.08	0.02	29.7%	0.06	7.3%
DX_RenalFail	Renal failure diagnosis (prior 2 years)	0.09	0.02	28.5%	0.07	5.9%
NumChronic	Number of long-term conditions	1.09	0.37	61.8%	1.12	2.1%

It was helpful to view charts of prior activity by month up to referral month, comparing the selected controls with the intervention group. These are not shown here. Figure C.1 in Appendix C displays the traces of activity both pre and post referral. The numbers of emergency admissions per month were relatively well matched, although in the final month the controls had slightly fewer admissions than the intervention group (although the standardised difference was less than 10 per cent). The groups were less well matched on the number of bed days before referral: the intervention group had over twice as many per person in each of the four months prior to referral compared with the controls.

Hospital discharge schemes – matching for the analysis of referral spell length of stay

For the five areas providing some kind of hospital discharge scheme, two observations about the referrals helped to establish our approach to matching. First, a very large majority of each area's referrals were made from within a single acute hospital trust (see Table B.6; some had additional referrals from small community hospitals: see Appendix A). Second, of those referred, a large majority had originally been admitted as emergencies.

We made a pragmatic decision to find controls only for individuals admitted as emergencies to large acute trusts.

Table B.6: Hospital discharge schemes: main acute trusts

Area	Service recipients' hospital trusts
BRC Derbyshire	Chesterfield Royal Hospital NHS Foundation Trust (trust code RFS)
Westbank, Exeter	Royal Devon & Exeter NHS Foundation Trust (trust code RH8)
RVS Leicestershire	University Hospitals of Leicester NHS Trust (trust code RWE)
Leeds service	Leeds Teaching Hospitals NHS Trust (trust code RR8)
Age UK Oxfordshire	Oxford University Hospitals NHS Foundation Trust (trust code RTH)

Pool of possible control individuals

For each of the five hospital trusts in which referrals were made (see Table B.6), we aimed to find three or four similar acute trusts.

There is no precise formula for pairing hospitals so we looked for hospitals that were similar in terms of size (based on completed non-elective episodes), teaching status and geography – preferring hospitals in the same region. These are shown in Table B.7.

Table B.7: Initial set of matched hospitals for length of stay analysis				
Area	Hospitals from which referrals were made		Matched control hospital trusts	
BRC Derbyshire	RFS	Chesterfield Royal Hospital NHS Foundation Trust	RJF	Burton Hospitals NHS Foundation Trust
			RNQ	Kettering General Hospital NHS Foundation Trust
			RQW	The Princess Alexandra Hospital NHS Trust
Westbank, Exeter	RH8	Royal Devon & Exeter NHS Foundation Trust	RK9	Plymouth Hospitals NHS Trust
			REF	Royal Cornwall Hospitals NHS Trust
			RA7	University Hospitals Bristol NHS Foundation Trust
RVS Leicestershire	RWE	University Hospitals of Leicester NHS Trust	RR1	Heart of England NHS Foundation Trust
			RX1	Nottingham University Hospitals NHS Trust
			RKB	University Hospitals Coventry and Warwickshire NHS Trust
Leeds service	RR8	Leeds Teaching Hospitals NHS Trust	RW3	Central Manchester University Hospitals NHS Foundation Trust
			RTD	The Newcastle upon Tyne Hospitals NHS Foundation Trust
			RHQ	Sheffield Teaching Hospitals NHS Foundation Trust
			RCB	York Teaching Hospital NHS Foundation Trust
Age UK Oxfordshire	RTH	Oxford University Hospitals NHS Foundation Trust	RGT	Cambridge University Hospitals NHS Foundation Trust
			RHM	University Hospital Southampton NHS Foundation Trust
			RYR	Western Sussex Hospitals NHS Foundation Trust

We then excluded a number of these trusts. Using a random sample of English hospital admissions data, we developed a model to predict length of stay at the outset of an emergency admission (see Box B.2). One of the sets of variables in this prediction model was the trust itself (included as a set of dummy variables). The model's estimates for each potential control trust were compared with those of the intervention trust, and if they were significantly different, the potential control trust was excluded. In doing this we aimed to select only a subgroup of hospital trusts whose behaviour (in terms of lengths of stay of admissions) was similar, after adjusting for other differences between trust cohorts. We remained with potential control trusts as given in Table B.9.

Box B.2: Predicting length of stay

Using HES datasets from April 2012 to March 2013, we extracted information about every emergency admission of residents of England aged 55+ where the individual was discharged alive.

We split this dataset into two random 50 per cent samples of 1.25 million people each. A multivariate linear regression model was fitted using one of the samples. We modelled the *length of stay – defined as the number of overnight stays in hospital as an admitted inpatient* (the dependent variable), using a large range of independent variables derived from the HES data describing each person (age, sex, disease history) and the person’s history of past hospital activity – all calculated at the admission date. The model produced was validated on the second 50 per cent sample.

The model’s performance was good (see Table B.8). We also tested poisson and negative binomial models, but these did not predict with any greater accuracy than a linear model.

Table B.8: Model performance: observed average length of stay for selected groupings of predicted length of stay

Predicted length of stay (days)	N	Observed average length of stay (days)
0–1.999	87,260	1.8
2–3.999	167,376	3.0
4–5.999	240,009	4.7
6–7.999	231,299	6.7
8–9.999	185,057	9.0
10–11.999	128,078	11.0
12–13.999	76,079	12.8
14–15.999	47,174	14.9
16–17.999	29,982	17.0
18–19.999	24,160	19.6
20–21.999	9,274	22.1
22 +	3,327	25.2

Table B.9: Final set of matched hospitals for length of stay analysis

Area	Hospitals from which referrals were made		Hospitals from which controls were selected	
BRC Derbyshire	RFS	Chesterfield Royal Hospital NHS Foundation Trust	RJF	Burton Hospitals NHS Foundation Trust
			RNQ	Kettering General Hospital NHS Foundation Trust
			RQW	The Princess Alexandra Hospital NHS Trust
Westbank, Exeter	RH8	Royal Devon & Exeter NHS Foundation Trust	RK9	Plymouth Hospitals NHS Trust
RVS Leicestershire	RWE	University Hospitals Of Leicester NHS Trust	RR1	Heart of England NHS Foundation Trust
			RX1	Nottingham University Hospitals NHS Trust
Leeds service	RR8	Leeds Teaching Hospitals NHS Trust	RCB	York Teaching Hospital NHS Foundation Trust
			RHQ	Sheffield Teaching Hospitals NHS Foundation Trust
Age UK Oxfordshire	RTH	Oxford University Hospitals NHS Foundation Trust	RYR	Western Sussex Hospitals NHS Foundation Trust

Matching procedure

For all 14 hospital trusts shown in Table B.9 (the five intervention and nine control trusts), every emergency admission spell that lay within the period 1 September 2014 to 30 June 2015 was selected as an event of interest. September admissions were included to capture admissions that ended in October, but began before 1 October.

For each of these admission spells, we calculated a large number of variables to describe the admitted person's history of hospital use from the HES data in the two years (720 days) prior to the admission date of the spell. This included counts of admissions and other hospital visits, and recorded long-term and other diseases.

A large subset of these variables was used to calculate a predicted length of stay for the spell (see Box B.2).

The following points describe the steps undertaken to match people admitted during October 2014 and subsequently referred to the schemes. A similar approach was carried out for each of the months from September 2014 to June 2015.

- We selected the set of variables for the admissions associated with the referrals to the schemes during October 2014 (N = 165) from the five scheme hospitals. Each person could only have one such admission event.
- From the nine matched hospitals we in addition selected the same set of variables for all admission spells that started between September 2014 and January 2015 inclusive (N = 102,416). People were able to have multiple admission events included in this dataset.
- For each of these above admissions, we exported a small number of important variables (see Table B.10) into a smaller dataset.

Table B.10: Matching variables		
Variable	Description	Variable type
xhesid	Person identifier (pseudonymised)	Identifier
Intervention	Intervention group = 1, or possible control = 0	To distinguish between the two groups – intervention/control
agebnd	Five year age bands 60–64, ..., 90+	
siteN	DB, EX, LC, LD, OX	Matching variables: exact match
sex	Male or female	
pred	Predicted length of stay	Matching variable: very close match
age	Age in years	
IMD_SCORE	2010 IMD score of LSOA of residence	
EMADM_N_000090	N emergency admissions in prior 90 days	
EMADM_N_000360	N emergency admissions in prior 360 days	
ALLAE_N_000030	N A&E visits in prior 30 days	Other matching variables
AEvis_090180	N A&E visits in prior 90 to 180 days	
OP_ALL_000360	N outpatient attendances in prior 30 days	
OP_ALL_000360	N outpatient attendances in prior 360 days	
admidate	Admission date of spell	

- We used the GenMatch genetic matching program in R to find controls. People were matched exactly on age band, sex and which of the five sites they belonged to (either as people referred to the schemes or as potential controls), and the procedure was forced to match very closely on the predicted length of stay. All other variables we attempted to match on are given in Table B.10. Matches took place with replacement (so a control individual could be chosen as the best match for two or more intervention individuals). Note that this was our final list of matching variables after two iterations.
- The outcome of the GenMatch program was a list of 165 most closely matching individuals, one for each of the intervention individuals.

This was repeated nine times for each of the other months from September 2014 to June 2015, so that we finally had one match for each of the hospital inpatient-referred service recipients between October 2014 and June 2015. Note that the months of admissions included as potential controls varied depending on the month of discharge for the intervention group, with the aim that discharges more than four months away in time (either before or after) were not eligible for matching.

How closely matched were the controls?

We summarised the success of the matching by calculating the *standardised differences* in the means of a large set of descriptive variables (see above). Table B.11 shows the means of an important set of variables, which we would expect to be similar in the selected control group and the intervention group. Very few characteristics show a strong difference in means (as measured by standardised differences greater than 10 per cent).

Table B.11: Mean values of important characteristic variables for the intervention group, potential controls and selected controls (standardised differences are also shown)

		Intervention group	Potential controls	Selected controls		
		N = 2,321	N = 200,539	N = 2,321		
Variable	Description	Mean	Mean	Standardised difference	Mean	Standardised difference
Female	Sex = female	0.60	0.53	0.14	0.60	0.00
age	Age (year)	82.02	77.74	49.0%	81.92	1.3%
agebnd60	Aged 60–64	0.03	0.11	29.5%	0.03	0.0%
agebnd65	Aged 65–69	0.06	0.13	26.8%	0.06	0.0%
agebnd70	Aged 70–74	0.09	0.14	16.5%	0.09	0.0%
agebnd75	Aged 75–79	0.15	0.17	4.3%	0.15	0.0%
agebnd80	Aged 80–84	0.25	0.18	17.5%	0.25	0.0%
agebnd85	Aged 85–89	0.25	0.16	23.9%	0.25	0.0%
agebnd90	Aged 90 +	0.17	0.12	14.9%	0.17	0.0%
IMD1	IMD decile 1 (most deprived)	0.15	0.11	10.5%	0.11	10.9%
IMD2	IMD decile 2	0.10	0.09	2.7%	0.09	2.3%
IMD3	IMD decile 3	0.10	0.10	0.6%	0.11	3.3%
IMD4	IMD decile 4	0.11	0.09	6.9%	0.10	4.0%
IMD5	IMD decile 5	0.08	0.10	8.0%	0.11	10.1%
IMD6	IMD decile 6	0.09	0.11	5.6%	0.11	6.2%
IMD7	IMD decile 7	0.10	0.11	1.8%	0.12	5.5%
IMD8	IMD decile 8	0.10	0.10	1.8%	0.10	1.6%
IMD9	IMD decile 9	0.09	0.09	1.3%	0.07	6.7%
IMD10	IMD decile 10 (least deprived)	0.08	0.10	5.4%	0.07	2.4%
pred_0_1	Predicted LOS* 0,1 day	0.00	0.02	14.2%	0.00	0.8%
pred_2_3	Predicted LOS 2,3 days	0.02	0.08	26.2%	0.02	0.6%
pred_4_5	Predicted LOS 4,5 days	0.10	0.14	12.0%	0.10	0.1%
pred_6_7	Predicted LOS 6,7 days	0.18	0.19	1.9%	0.18	0.0%
pred_8_9	Predicted LOS 8,9 days	0.21	0.18	8.1%	0.21	0.6%

pred_10_11	Predicted LOS 10,11 days	0.20	0.15	14.3%	0.21	1.2%
pred_12_13	Predicted LOS 12,13 days	0.14	0.10	12.1%	0.13	2.2%
pred_14_15	Predicted LOS 14,15 days	0.07	0.06	2.3%	0.07	2.3%
pred_16_17	Predicted LOS 16,17 days	0.03	0.04	2.6%	0.03	2.9%
pred_18_19	Predicted LOS 18,19 days	0.02	0.02	4.3%	0.02	0.3%
pred_20_21	Predicted LOS 20,21 days	0.01	0.02	2.9%	0.01	0.0%
pred_22_23	Predicted LOS 22,23 days	0.00	0.01	1.2%	0.00	0.0%
pred_24_pl	Predicted LOS 24+ days	0.00	0.00	0.7%	0.00	0.0%
EMADM_N_000360	N emergency admissions prior year	1.18	1.20	0.2%	1.08	5.2%
ELADM_N_000360	N elective admissions prior year	0.10	0.19	13.1%	0.11	2.3%
OP_ALL_000360	N outpatient attendances prior year	4.67	5.90	15.2%	4.40	4.7%
AEVIS_000360	N A&E visits prior year	1.80	2.08	9.7%	2.02	10.4%
DX_Hyperten	Hypertension diagnosis (prior 2 years)	0.45	0.44	2.0%	0.44	2.6%
DX_Injury	Injury diagnosis (prior 2 years)	0.30	0.26	7.0%	0.27	6.8%
DX_Ment	Mental ill health diagnosis (prior 2 years)	0.28	0.25	6.8%	0.23	10.7%
DX_PVD	Peripheral vascular disease diagnosis (prior 2 years)	0.26	0.23	7.4%	0.23	6.5%
DX_AngIschHD	Angina/ischaemic heart disease diagnosis (prior 2 years)	0.25	0.24	3.7%	0.24	3.1%
DX_AtrlFig	Atrial fibrillation diagnosis (prior 2 years)	0.24	0.20	10.8%	0.21	6.7%
DX_Diabetes	Diabetes diagnosis (prior 2 years)	0.18	0.18	0.4%	0.18	1.5%
DX_Fall	Fall diagnosis (prior 2 years)	0.18	0.13	11.7%	0.15	7.1%
DX_Cancer	Cancer diagnosis (prior 2 years)	0.12	0.17	13.8%	0.13	2.7%
DX_COPD	COPD diagnosis (prior 2 years)	0.19	0.15	10.2%	0.16	6.8%
DX_CVD	Cardiovascular disease diagnosis (prior 2 years)	0.12	0.11	0.7%	0.12	0.1%
DX_RenalFail	Renal failure diagnosis (prior 2 years)	0.15	0.15	1.1%	0.16	3.8%
NumChronic	Number of long-term conditions	1.75	1.63	6.7%	1.65	5.8%
Admidate	Discharge date of spell	18 February 2015	29 January 2015	24.7%	18 February 2015	0.3%

* LOS = length of stay.

Hospital discharge schemes – matching for post-referral follow-up

Pool of possible control individuals

As detailed in the previous section, for each of the five hospital trusts in which referrals were made (see Table B.6), we aimed to find three similar acute trusts. These are shown in Table B.12.

We only allowed individuals who had been admitted as emergencies to these trusts in the nine months of interest to be selected as possible controls.

Table B.12: Set of matched hospitals

Area	Hospitals from which referrals were made	Matched control hospital trusts	
BRC Derbyshire	RFS	RJF	Burton Hospitals NHS Foundation Trust
		RNQ	Kettering General Hospital NHS Foundation Trust
		RQW	The Princess Alexandra Hospital NHS Trust
Westbank, Exeter	RH8	RK9	Plymouth Hospitals NHS Trust
		REF	Royal Cornwall Hospitals NHS Trust
		RA7	University Hospitals Bristol NHS Foundation Trust
RVS Leicestershire	RWE	RR1	Heart of England NHS Foundation Trust
		RX1	Nottingham University Hospitals NHS Trust
		RKB	University Hospitals Coventry and Warwickshire NHS Trust
Leeds service	RR8	RW3	Central Manchester University Hospitals NHS Foundation Trust
		RTD	The Newcastle upon Tyne Hospitals NHS Foundation Trust
		RCB*	York Teaching Hospital NHS Foundation Trust
Age UK Oxfordshire	RTH	RGT	Cambridge University Hospitals NHS Foundation Trust
		RHM	University Hospital Southampton NHS Foundation Trust
		RYR	Western Sussex Hospitals NHS Foundation Trust

* Sheffield Teaching Trust (RHQ) had been originally selected, but due to missing inpatient data (from August 2015) was replaced with York.

Matching procedure

For all 20 hospital trusts shown in Table B.12 (the five intervention and fifteen control trusts), every emergency admission spell that lay within the period from 1 October 2014 to 30 June 2015 was selected as an event of interest.

For each of these admission spells, we calculated a large number of variables to describe the admitted person's history of hospital use from the HES data in the two years (720 days) prior to the discharge date of the spell. This included counts of admissions and other hospital visits, and recorded long-term and other diseases.

A large subset of these variables was used to calculate a risk of emergency admission score for each individual (see Box B.3). This score was a prediction of the likelihood of an emergency admission in the 360 days following the discharge date.

Box B.3: Risk score to predict future emergency admissions on discharge from hospital

Using HES datasets from April 2012 to March 2013, we extracted information about every emergency admission of residents of England aged 55+ where the individual was discharged alive.

We split this dataset into two random 50 per cent samples of 1.8 million people each. A multivariate logistic regression model was fitted using one of the samples. We modelled the event of *at least one emergency admission in the year following the discharge date* (the dependent variable), using a large range of independent variables derived from the HES data describing each person (age, sex, disease history) and the person's history of past hospital activity.

The models produced were validated on the second 50 per cent sample. Table B.13 shows selected performance statistics for each of the 10 deciles of risk band. The performance of the model was broadly in line with other hospital discharge-based models.

Table B.13: Model performance – in-band positive predictive values (PPVs) and mean number of future emergency admissions for risk deciles (C statistic = 0.734), ages 60+

Risk decile (N = 238,988 in each)	% admitted within year (PPV within decile band)	Future year emergency admissions per person (within decile band)
Risk decile 1 (highest risk)	89.9%	3.97
Risk decile 2	87.5%	2.14
Risk decile 3	81.6%	1.81
Risk decile 4	71.0%	1.61
Risk decile 5	61.8%	1.37
Risk decile 6	55.6%	1.17
Risk decile 7	50.0%	1.02
Risk decile 8	45.0%	0.90
Risk decile 9	40.8%	0.82
Risk decile 10 (lowest risk)	38.3%	0.85

The following points describe the steps undertaken to match people referred to the schemes and discharged during October 2014. A similar approach was carried out for each of the nine months from October 2014 to June 2015.

- We selected the set of variables for the discharges associated with the referrals to the schemes (N = 118) from the five scheme hospitals during October 2014. Each person could only have one such discharge event.
- From the 15 matched hospitals we in addition selected the same set of variables for all admission spells that ended in a live discharge during October 2014 to January 2015 inclusive (N = 133,751). People were able to have multiple discharge events included in this dataset.

For each of the above discharges, we exported a small number of important variables (see Table B.14) into a smaller dataset.

Table B.14: Matching variables

Variable	Description	Variable type
xhesid	Person identifier (pseudonymised)	Identifier
Intervention	Intervention group = 1, or possible control = 0	To distinguish between the two groups – intervention/control
agebnd	Five-year age bands 60–64, ..., 90+	Matching variables: Exact match
siteN	DB, EX, LC, LD, OX	
sex	Male or female	
score	Logit of future emergency admission risk score	Matching variable: Very close match
age	Age in years	Other matching variables
IMD_SCORE	2010 IMD score of LSOA of residence	
EMADM_N_000030	N emergency admissions in prior 30 days	
EMADM_N_030060	N emergency admissions in prior 30 to 60 days	
EMADM_N_060090	N emergency admissions in prior 60 to 90 days	
EMADM_N_000360	N emergency admissions in prior 360 days	
EMADM_B_030060	Any emergency admission in prior 30 to 60 days	
EMADM_B_060090	Any emergency admission in prior 60 to 90 days	
NEMADM_N_000030	N elective admissions in prior 30 days	
NEMADM_N_030060	N elective admissions in prior 30 to 60 days	
ELADM_N_000090	N elective admissions in prior 90 days	
DX_Diabetes	Diagnosis of diabetes in prior 720 days	
DX_Hyperten	Diagnosis of hypertension in prior 720 days	
DX_COPD	Diagnosis of COPD in prior 720 days	
DX_Fall	Diagnosis of fall in prior 720 days	
DX_Ment	Diagnosis of mental ill health in prior 720 days	
DX_Anem	Diagnosis of anaemia in prior 720 days	
DX_CVD	Diagnosis of cardiovascular disease in prior 720 days	
DX_CTDRHART	Diagnosis of connective tissue disease, rheumatoid arthritis of in prior 720 days	
DX_RenalFail	Diagnosis of renal failure in prior 720 days	
DX_RespInf	Diagnosis of respiratory infection in prior 720 days	
IP_ACS_030	N admissions for ambulatory care sensitive conditions in prior 30 days	
CH_INDEX	Charlson index score	
ALLAE_N_000030	N A&E visits in prior 30 days	

AEvis_000090	N A&E visits in prior 90 days
ALLAE_B_000030	Any A&E visit in prior 30 days
OP_ALL_000360	N outpatient attendances in prior 360 days
LOGLOS	Log of the length of stay of discharge spell
losbnd30	Length of stay of discharge spell \geq 30 days
disdate	Discharge date of discharge spell

- We used the GenMatch genetic matching program in R to find controls. People were matched exactly on age band, sex and which of the five project sites they belonged to (either as people referred to the schemes or as potential controls), and the procedure was forced to match very closely on the logit of the risk score. All other variables we attempted to match on are given in Table B.13. Matches took place with replacement (so a control individual could be chosen as the best match for two or more intervention individuals). Note that this was our final list of matching variables after a single iteration.
- The outcome of the GenMatch program was a list of 118 most closely matching individuals, one for each of the intervention individuals.

This was repeated eight times for each of the subsequent months, so that we finally had one match for each of the hospital inpatient-referred service recipients between October 2014 and June 2015. Note that the months of discharges included as potential controls varied depending on the month of discharge for the intervention group, with the aim that discharges more than four months away in time (either before or after) were not eligible for matching.

How closely matched were the controls?

We summarised the success of the matching in a number of ways.

First, we calculated the *standardised differences* in the means of a large set of descriptive variables (see above). Table B.15 shows the means of an important set of variables, which we would expect to be similar in the selected control group. From the standardised differences we observed that the large pool of potential controls (all months combined) was different in average characteristics from the intervention group in many respects (with standardised differences commonly well above 10 per cent).

The selected controls were much more similar to the intervention group, although there were some notable remaining differences, for example:

- mean emergency admissions in the prior year were slightly higher among the intervention group (2.11 versus 1.89 among the controls)
- the lengths of stay of the initial discharge spell were slightly longer (mean of 12.1 days versus 10.3 among the controls)
- some diseases were more prevalent in the intervention group (notably peripheral vascular disease, mental ill health and injuries/falls).

Table B.15: Mean values of important characteristic variables for the intervention group, potential controls and selected controls (standardised differences are also shown)

Variable	Description	Intervention group N = 2,280	Potential controls N = 240,392	Standardised difference	Selected controls N = 2,280	Standardised difference
		Mean	Mean		Mean	
Female	Sex = female	0.60	0.53	14.8%	0.60	0.0%
age	Age (year)	82.08	77.65	51.1%	81.95	1.8%
agebnd60	Aged 60–64	0.03	0.09	27.5%	0.03	0.0%
agebnd65	Aged 65–69	0.06	0.14	29.5%	0.06	0.0%
agebnd70	Aged 70–74	0.09	0.15	17.1%	0.09	0.0%
agebnd75	Aged 75–79	0.15	0.17	5.7%	0.15	0.0%
agebnd80	Aged 80–84	0.25	0.18	17.8%	0.25	0.0%
agebnd85	Aged 85–89	0.25	0.15	24.2%	0.25	0.0%
agebnd90	Aged 90 +	0.17	0.11	17.3%	0.17	0.0%
IMD1	IMD decile 1 (most deprived)	0.15	0.10	13.8%	0.12	8.4%
IMD2	IMD decile 2	0.10	0.09	5.0%	0.08	6.6%
IMD3	IMD decile 3	0.10	0.10	0.3%	0.12	7.1%
IMD4	IMD decile 4	0.11	0.11	1.2%	0.11	0.0%
IMD5	IMD decile 5	0.08	0.11	9.9%	0.10	6.8%
IMD6	IMD decile 6	0.09	0.10	3.4%	0.10	2.0%
IMD7	IMD decile 7	0.10	0.11	3.1%	0.11	2.7%
IMD8	IMD decile 8	0.10	0.10	0.8%	0.09	0.3%
IMD9	IMD decile 9	0.10	0.09	1.3%	0.08	4.5%
IMD10	IMD decile 10 (least deprived)	0.08	0.10	6.1%	0.09	1.9%
DEC_HIRISK_1	Risk decile 1 (highest risk)	0.09	0.10	4.0%	0.08	1.2%
DEC_HIRISK_2	Risk decile 2	0.08	0.11	9.6%	0.09	1.1%
DEC_HIRISK_3	Risk decile 3	0.08	0.11	8.4%	0.09	0.9%
DEC_HIRISK_4	Risk decile 4	0.11	0.11	1.7%	0.11	2.1%
DEC_HIRISK_5	Risk decile 5	0.13	0.10	7.4%	0.12	1.2%
DEC_HIRISK_6	Risk decile 6	0.13	0.10	8.9%	0.13	0.1%
DEC_HIRISK_7	Risk decile 7	0.11	0.10	4.3%	0.12	3.7%
DEC_HIRISK_8	Risk decile 8	0.09	0.09	0.1%	0.10	1.9%
DEC_HIRISK_9	Risk decile 9	0.09	0.09	1.3%	0.08	2.8%

DEC_HIRISK_10	Risk decile 10 (lowest risk)	0.07	0.08	2.6%	0.07	0.0%
EMADM_N_000360	N emergency admissions prior year	2.11	1.96	6.9%	1.89	11.3%
ELADM_N_000360	N elective admissions prior year	0.10	0.19	13.6%	0.11	3.4%
OP_ALL_000360	N outpatient attendances prior year	4.72	5.80	14.3%	4.85	2.1%
AEVIS_000360	N A&E visits prior year	1.81	2.12	11.5%	1.97	10.0%
DX_Hyperten	Hypertension diagnosis (prior 2 years)	0.63	0.58	8.9%	0.64	2.5%
DX_Injury	Injury diagnosis (prior 2 years)	0.46	0.39	14.1%	0.38	15.0%
DX_Ment	Mental ill health diagnosis (prior 2 years)	0.44	0.35	19.0%	0.37	15.4%
DX_PVD	Peripheral vascular disease diagnosis (prior 2 years)	0.44	0.32	24.0%	0.36	16.2%
DX_AngIschHD	Angina/ischaemic heart disease diagnosis (prior 2 years)	0.33	0.31	4.7%	0.34	2.4%
DX_AtrlFig	Atrial fibrillation diagnosis (prior 2 years)	0.34	0.26	15.9%	0.31	4.9%
DX_Diabetes	Diabetes diagnosis (prior 2 years)	0.25	0.23	4.4%	0.21	9.3%
DX_Fall	Fall diagnosis (prior 2 years)	0.28	0.21	15.4%	0.22	12.2%
DX_Cancer	Cancer diagnosis (prior 2 years)	0.16	0.20	10.0%	0.16	0.5%
DX_COPD	COPD diagnosis (prior 2 years)	0.25	0.19	12.9%	0.21	8.2%
DX_CVD	Cardiovascular disease diagnosis (prior 2 years)	0.19	0.18	2.9%	0.17	5.9%
DX_RenalFail	Renal failure diagnosis (prior 2 years)	0.21	0.19	5.4%	0.22	0.3%
NumChronic	Number of long-term conditions	2.44	2.15	16.6%	2.28	8.6%
DISDATE	Discharge date of spell	1 March 2015	13 February 2015	21.4%	1 March 2015	0.7%
LOS	Length of stay discharge spell	12.14	9.16	20.1%	10.34	12.2%
losbnd01	Spell LOS* = 1 day	0.07	0.19	36.4%	0.10	9.7%
losbnd02	Spell LOS = 2 days	0.16	0.16	0.2%	0.14	3.7%

losbnd03	Spell LOS = 3 days	0.10	0.09	3.3%	0.09	4.7%
losbnd04	Spell LOS = 4 to 7 days	0.20	0.21	2.1%	0.25	11.9%
losbnd08	Spell LOS = 8 to 14 days	0.21	0.17	10.3%	0.22	1.7%
losbnd15	Spell LOS = 15 to 29 days	0.16	0.12	11.5%	0.14	5.9%
losbnd30	Spell LOS = 30 days +	0.10	0.06	14.2%	0.06	13.2%

* LOS = length of stay.

It was also helpful to view charts of prior activity by month up to referral month, comparing the selected controls with the intervention group. These are not shown here. Figure C.2 in Appendix C displays the traces of activity both pre and post referral.

A&E scheme

A&E-based referrals only took place in one hospital trust: Leeds Teaching Hospitals NHS Trust (RR8).

Pool of possible control individuals

We identified two trusts to use as potential control hospitals: York Hospitals NHS Trust (RCB) and Pennine Acute Hospitals NHS Trust (RW6).

Using a random sample of English A&E data, we had developed a prediction model to predict the risk of admission to an inpatient ward from A&E (see Box B.4). One of the sets of variables in this prediction model was the hospital trust itself (included as a set of dummy variables). The model's estimates for each trust were compared with those of the intervention trust (Leeds Teaching Hospitals NHS Trust). A small number, including York and Pennine hospital trusts, were not significantly different from Leeds – suggesting that given similar cohorts in A&E, a similar proportion would be admitted in each of these three trusts. The handful of other trusts were not selected, either because they were in very different areas of England from Leeds or because they were much smaller in terms of overall activity

Matching procedure

For all three hospital trusts (Leeds Teaching Hospitals NHS Trust and the two control trusts), every A&E visit in the period from 1 October 2014 to 30 June 2015 was selected as an event of interest.

For each of these A&E visits, we calculated a large number of variables to describe the relevant person's history of hospital use from the HES data in the two years (720 days) prior to the date of the A&E visit. This included counts of admissions and other hospital visits, and recorded long-term and other diseases.

A large subset of these variables was used to calculate a predicted risk of admission from A&E on the day of the A&E visit or the next (see Box B.4).

Box B.4: Predicting risk of admission from A&E

Using HES datasets from April 2014 to March 2015, we extracted information about every A&E visit of residents of England aged 55+.

We split this dataset into two random 50 per cent samples of 2.2 million people each. A multivariate logistic regression model was fitted using one of the samples. We modelled the event of *an unplanned admission on the day of the A&E visit (or the following day)* (the dependent variable), using a large range of independent variables derived from the HES data describing each person (age, sex, disease history) and the person's history of past hospital activity.

The model produced was validated on the second 50 per cent sample.

The model performed well – Table B.16 shows selected performance statistics for each of the 10 deciles of risk band.

Table B.16: Model performance – in-band positive predictive values (PPVs) of unplanned admission following A&E visit for risk deciles (C statistic = 0.796)

Risk decile (N = 436,371 each)	% admitted (PPV within decile band)
1 – highest	85.9%
2	81.5%
3	76.1%
4	69.4%
5	60.7%
6	50.2%
7	39.3%
8	27.7%
9	17.9%
10 – lowest	10.5%

The following points describe the steps undertaken to match people referred to the scheme in A&E during a visit in October 2014. A similar approach was carried out for each of the nine months from October 2014 to June 2015.

- We selected the set of variables for the A&E visits associated with referrals to the A&E-based scheme during October 2014 (N = 89) from Leeds Teaching Hospitals NHS Trust. Each person could only have one such event.
- From the two matched hospital trusts, we in addition selected the same set of variables for all A&E visits during the period from October 2014 to January 2015 inclusive (N = 41,089). People were able to have multiple admission events included in this dataset.
- For each of these A&E visits, we exported a small number of important variables (see Table B.17) into a smaller dataset.

Table B.17: Matching variables		
Variable	Description	Variable type
xhesid	Person identifier (pseudonymised)	Identifier
Intervention	Intervention group = 1, or possible control = 0	To distinguish between the two groups – intervention/control
agebnd	Five year age bands 60–64, ..., 90+	
sex	Male or female	Matching variables: exact match
ARR_AMB	Arrival to A&E by ambulance	
score_noh	Predicted risk of admission	Matching variable: very close match
age	Age in years	
EMADM_N_000030	N emergency admissions in prior 30 days	
EMADM_N_000360	N emergency admissions in prior 360 days	
NEMADM_N_000360	N elective admissions in prior 360 days	
ALLADM_N_000030	N admissions (any) in prior 30 days	Other matching variables
ALLAE_N_000030	N A&E visits in prior 30 days	
ALLOP_N_000360	N outpatient attendances in prior 30 days	
ARR_HOUR	A&E visit, hour of arrival (0 to 23)	
ARR_DAY	A&E visit, day of week of arrival (1 to 7)	
arrivaldate	Date of A&E visit	

- We used the GenMatch genetic matching program in R to find controls. People were matched exactly on age band, sex and whether they had arrived by ambulance, and the procedure was forced to match very closely on the predicted risk of (immediate) admission. All other variables we attempted to match on are given in Table B.16. Matches took place with replacement (so a control individual could be chosen as the best match for two or more intervention individuals). Note that this was our final list of matching variables after two iterations.
- The outcome of the GenMatch program was a list of 89 most closely matching individuals, one for each of the intervention individuals.

This was repeated eight times for each of the other months from October 2014 to June 2015, so that we finally had one match for each of the A&E-referred service recipients between October 2014 and June 2015. Note that the months of A&E visits included as potential controls varied depending on the month of the A&E visit for the intervention group, with the aim that A&E visits more than four months away in time (either before or after) were not eligible for matching.

How closely matched were the controls?

We summarised the success of the matching by calculating the *standardised differences* in the means of a large set of descriptive variables (see above). Table B.18 shows the means of an important set of variables, which we would expect to be similar in the selected control group and intervention group. Diagnoses of mental ill health and diabetes were not as common in the selected controls, but otherwise few characteristics showed a strong difference in means (as measured by standardised differences greater than 10) after matching.

Table B.18: Mean values of important characteristic variables for the intervention group, potential controls and selected controls (standardised differences are also shown)

Variable	Description	Intervention group N = 1,007	Potential controls N = 85,388	Standardised difference	Selected controls N = 1,007	Standardised difference
		Mean	Mean		Mean	
Female	Sex = female	0.63	0.55	17.1%	0.63	0.0%
ARRIVALAGE	Age (year)	82.40	76.45	68.8%	82.32	1.1%
agebnd60	Aged 60–64	0.01	0.12	42.9%	0.01	0.0%
agebnd65	Aged 65–69	0.05	0.16	38.1%	0.05	0.0%
agebnd70	Aged 70–74	0.09	0.15	19.2%	0.09	0.0%
agebnd75	Aged 75–79	0.18	0.17	1.5%	0.18	0.0%
agebnd80	Aged 80–84	0.27	0.16	25.6%	0.27	0.0%
agebnd85	Aged 85–89	0.23	0.13	25.0%	0.23	0.0%
agebnd90	Aged 90 +	0.17	0.10	23.3%	0.17	0.0%
IMD1	IMD decile 1 (most deprived)	0.24	0.17	17.9%	0.17	17.4%
IMD2	IMD decile 2	0.12	0.10	5.2%	0.10	5.0%
IMD3	IMD decile 3	0.11	0.09	5.6%	0.10	1.6%
IMD4	IMD decile 4	0.09	0.09	1.2%	0.08	3.2%
IMD5	IMD decile 5	0.07	0.09	8.7%	0.12	16.6%
IMD6	IMD decile 6	0.08	0.10	4.5%	0.10	4.8%
IMD7	IMD decile 7	0.09	0.09	1.7%	0.09	3.1%
IMD8	IMD decile 8	0.09	0.11	6.9%	0.10	4.1%
IMD9	IMD decile 9	0.07	0.10	8.9%	0.09	7.0%
IMD10	IMD decile 10 (least deprived)	0.04	0.08	13.1%	0.06	7.1%
DEC_HIRISK_1	Risk decile 1 (highest risk)	0.07	0.05	11.5%	0.07	0.4%
DEC_HIRISK_2	Risk decile 2	0.10	0.06	15.0%	0.09	1.7%
DEC_HIRISK_3	Risk decile 3	0.11	0.07	13.3%	0.12	1.6%

DEC_HIRISK_4	Risk decile 4	0.16	0.10	17.6%	0.16	1.4%
DEC_HIRISK_5	Risk decile 5	0.20	0.13	20.5%	0.20	0.5%
DEC_HIRISK_6	Risk decile 6	0.20	0.14	14.4%	0.20	0.3%
DEC_HIRISK_7	Risk decile 7	0.07	0.09	7.5%	0.07	0.8%
DEC_HIRISK_8	Risk decile 8	0.03	0.08	20.3%	0.03	0.0%
DEC_HIRISK_9	Risk decile 9	0.04	0.12	29.3%	0.04	0.0%
DEC_HIRISK_10	Risk decile 10 (lowest risk)	0.01	0.16	53.7%	0.01	0.9%
EMADM_N_000360	N emergency admissions prior year	1.00	0.88	9.2%	0.88	8.0%
ELADM_N_000360	N elective admissions prior year	0.11	0.14	5.5%	0.11	0.2%
OP_ALL_000360	N outpatient attendances prior year	4.72	4.99	3.1%	4.26	8.6%
AEVIS_000360	N A&E visits prior year	2.49	2.58	1.9%	2.40	4.0%
DX_Hyperten	Hypertension diagnosis (prior 2 years)	0.43	0.38	9.5%	0.44	3.8%
DX_Injury	Injury diagnosis (prior 2 years)	0.28	0.20	19.5%	0.24	8.6%
DX_Ment	Mental ill health diagnosis (prior 2 years)	0.30	0.22	18.4%	0.22	18.3%
DX_PVD	Peripheral vascular disease diagnosis (prior 2 years)	0.26	0.16	22.9%	0.22	9.4%
DX_AngIschHD	Angina/ischaemic heart disease diagnosis (prior 2 years)	0.25	0.21	7.6%	0.24	1.2%
DX_AtrlFig	Atrial fibrillation diagnosis (prior 2 years)	0.21	0.15	16.3%	0.18	7.0%
DX_Diabetes	Diabetes diagnosis (prior 2 years)	0.18	0.16	6.5%	0.19	3.8%
DX_Fall	Fall diagnosis (prior 2 years)	0.15	0.11	11.3%	0.14	2.0%
DX_Cancer	Cancer diagnosis (prior 2 years)	0.11	0.11	2.2%	0.12	1.9%
DX_COPD	COPD diagnosis (prior 2 years)	0.19	0.13	14.5%	0.14	13.0%
DX_CVD	Cardiovascular disease diagnosis (prior 2 years)	0.10	0.10	2.3%	0.12	5.4%
DX_RenalFail	Renal failure diagnosis (prior 2 years)	0.12	0.12	0.9%	0.15	9.8%
NumChronic	Number of long-term conditions	1.63	1.40	13.7%	1.62	0.7%

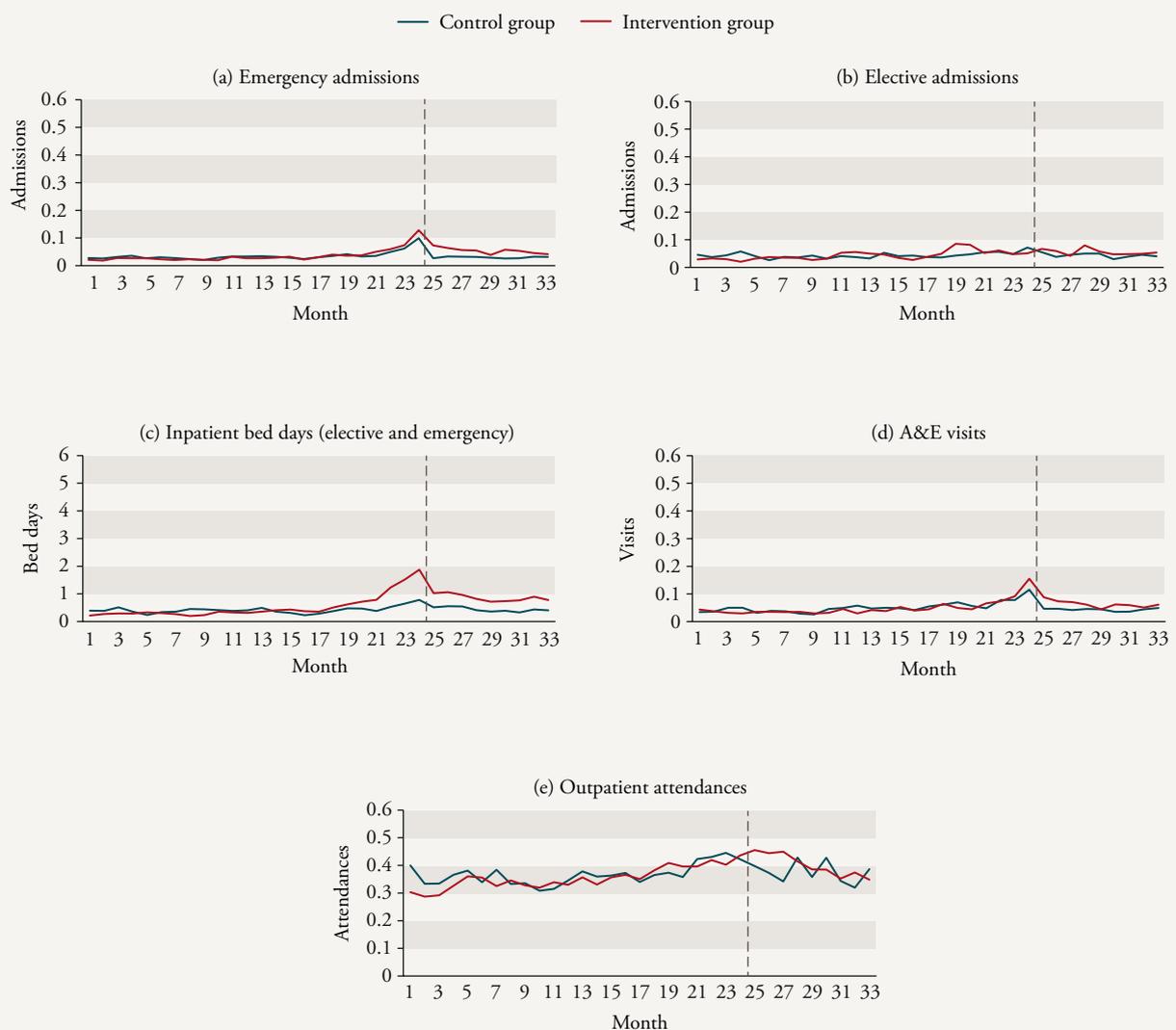
Arrivaldate	Discharge date of spell	4 February 2015	14 February 2015	14.0%	4 February 2015	0.4%
ARR_AMB	Arrival by ambulance	0.88	0.59	68.4%	0.88	0.0%
ARR_HOUR	A&E hour of arrival	12.86	13.12	5.2%	13.03	4.9%
ARR_DAY	A&E day of week of arrival	4.15	4.00	7.6%	4.07	3.8%

It was also helpful to view charts of prior activity by month up to referral month, comparing the selected controls with the intervention group. These are not shown here. Figure C.3 in Appendix C displays the traces of activity both pre and post referral.

Appendix C: Pre- and post-referral hospital activity for social action intervention and matched control groups

Community-based schemes

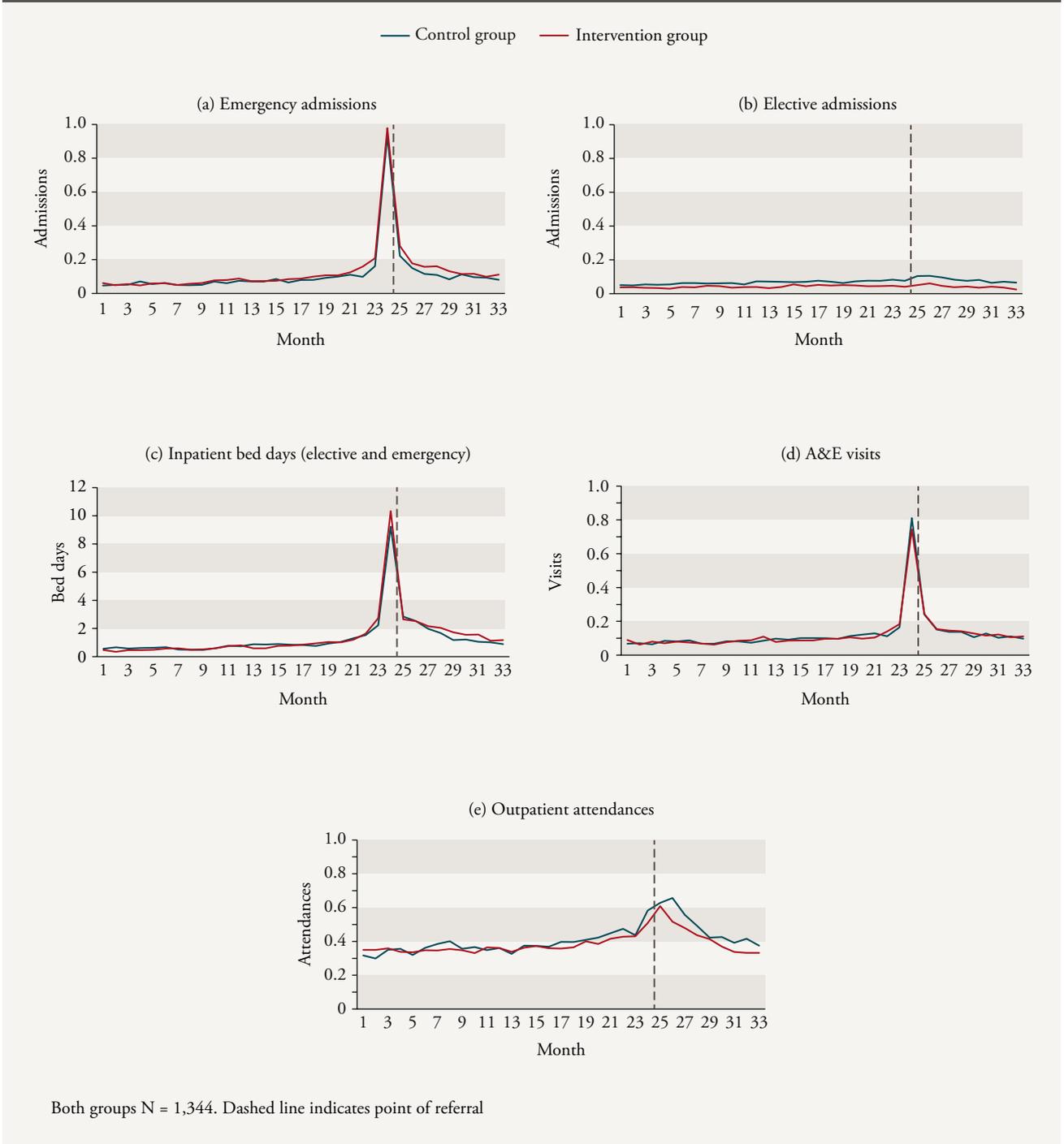
Figure C.1: Hospital activity pre and post referral: number per person per month (month 25 = first full month after referral)



Both groups N = 1,076. Dashed line indicates point of referral

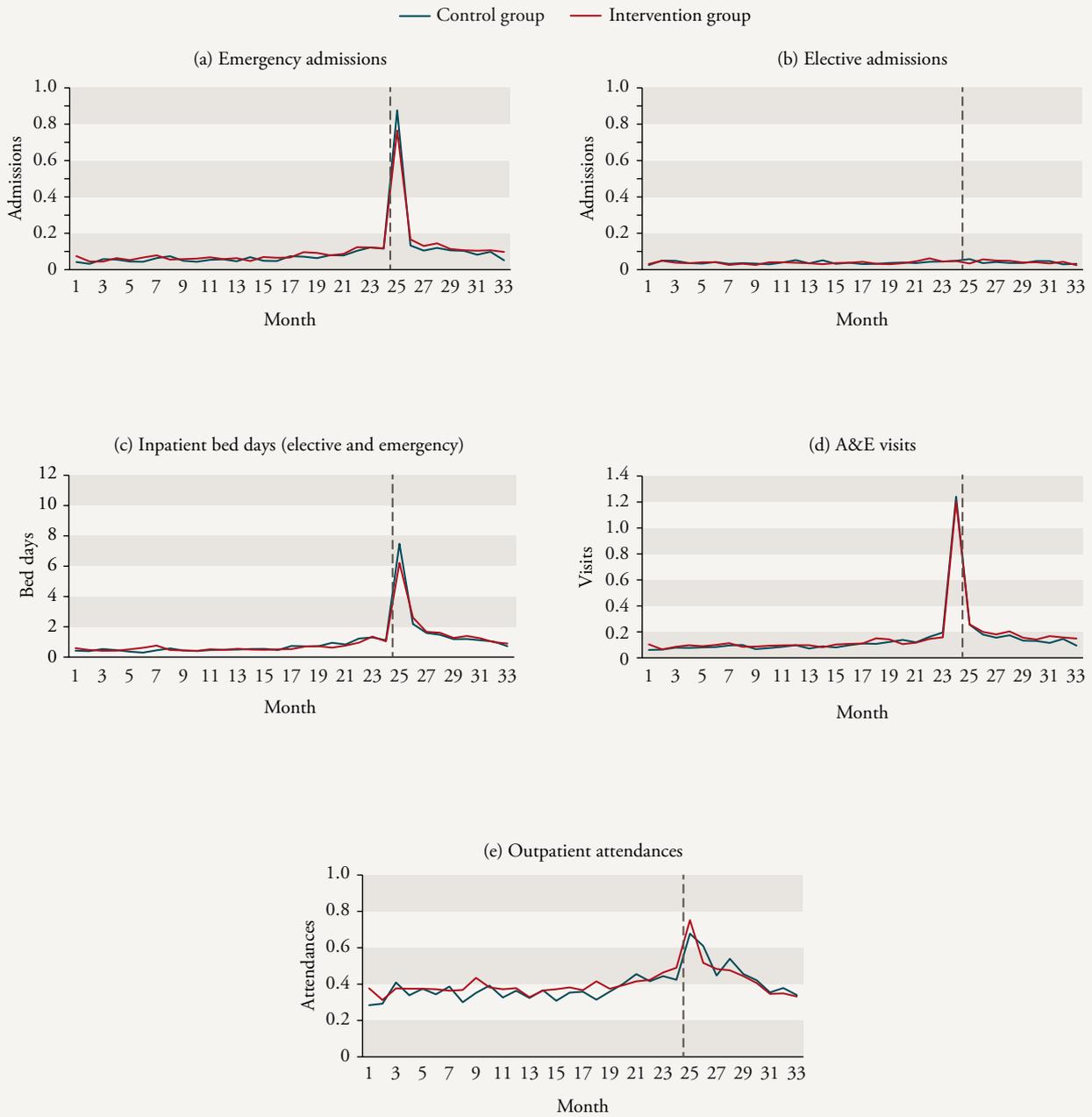
Hospital discharge schemes – matching for post-referral follow-up

Figure C.2: Hospital activity pre and post referral: number per person per month (month 25 = first full month after referral)



A&E scheme

Figure C.3: Hospital activity pre and post referral: number per person per month (month 25 = first full month after referral)



Both groups N = 753. Dashed line indicates point of referral

Appendix D: Secondary analyses

In this appendix, we summarise the results of further analyses that were undertaken to better understand some of our findings.

Analyses by age band

Table D.1 Mean adjusted cost differences (all hospital costs in the nine months following referral) between the intervention group and the matched controls when split by age band (60–74, 75–84 and 85+).

Service type	Age group	Number of people in intervention group	Mean cost, £ per person (standard deviation)		Adjusted difference in mean costs, £ per person (standard error)*		High or low compared with controls? (adjusted difference, at 5% statistical significance)
			Control group	Intervention group	Unadjusted	Adjusted	
Community referrals (N = 1,076)	60–74	274	1,634 (3,383)	2,272 (4,499)	638** (293)	478 (298)	No difference
	75–84	421	1,616 (2,844)	2,626 (4,527)	1,010** (253)	925** (250)	High cost
	85 +	381	1,968 (3,689)	2,775 (5,170)	806** (313)	721** (310)	High cost
Hospital inpatient referrals (N = 1,016)	60–74	185	6,828 (10,278)	5,623 (6,276)	-1,205 (793)	-1,173 (705)	No difference
	75–84	415	4,173 (6,052)	5,098 (6,321)	925** (415)	932** (388)	High cost
	85 +	416	4,230 (4,953)	4,278 (5,482)	47 (353)	-99 (364)	No difference
A&E referrals (N = 739)	60–74	107	5,338 (6,079)	5,900 (6,372)	562 (792)	182 (805)	No difference
	75–84	326	5,651 (5,744)	5,487 (5,963)	-164 (451)	-313 (439)	No difference
	85+	306	5,052 (4,878)	5,570 (5,143)	519 (373)	519 (372)	No difference
All schemes (N = 2,831)	60–74	566	4,032 (7,248)	4,053 (5,763)	21 (332)	-11 (302)	No difference
	75–84	1,162	3,661 (5,286)	4,311 (5,767)	650** (216)	565** (209)	High cost
	85+	1,103	3,677 (4,709)	4,117 (5,392)	440** (200)	355 (204)	No difference

* 0 = higher costs for the intervention group.

** statistically significant at the 5% level.

Analyses by risk band

Table D.2 shows the mean adjusted cost differences (all hospital costs in the nine months following referral) between the intervention group and the matched controls when split by risk bands (lowest 30 per cent, middle 40 per cent and highest 30 per cent risk). The risk bands are calculated relative to national risk profiles.

Table D.2: Mean adjusted differences in total hospital costs during the nine months post referral, by service type and risk band (referrals to March 2015)

Service type	Risk band	Number of people in intervention group	Mean cost, £ per person (standard deviation)		Adjusted difference in mean costs, £ per person (standard error)*		High or low compared with controls? (adjusted difference, at 5% statistical significance)
			Control group	Intervention group	Unadjusted	Adjusted	
Community referrals (N = 1,076)	Highest 30%	1,575	2,188 (2,941)	2,941 (5,039)	753** (212)	654** (213)	High cost
	Middle 40%	425	595 (1,691)	1,691 (3,528)	1,096** (255)	1,065** (264)	High cost
	Lowest 30%	152	464 (891)	1,375 (4,142)	911** (262)	647** (280)	High cost
Hospital inpatient referrals (N = 1,016)	Highest 30%	516	6,668 (8,835)	7,106 (7,590)	438 (679)	464 (597)	No difference
	Middle 40%	956	4,325 (6,221)	4,489 (5,253)	164 (369)	168 (348)	No difference
	Lowest 30%	560	3,419 (4,481)	3,454 (4,919)	35 (383)	-142 (397)	No difference
A&E referrals (N = 739)	Highest 30%	423	7,581 (6,512)	7,134 (6,080)	-448 (601)	-252 (608)	No difference
	Middle 40%	936	4,707 (4,770)	5,143 (5,544)	436 (332)	236 (330)	No difference
	Lowest 30%	119	2,612 (3,516)	3,480 (3,999)	868 (690)	920 (707)	No difference

* > 0 = higher costs for the intervention group.

** statistically significant at the 5% level.

Appendix E: Other characteristics of service users

There was a very wide difference between the project sites in the types of information collected in their administrative datasets, and in the way this information was recorded and coded. The selected information presented in this appendix is therefore a small subset of the data available.

Housing status

Housing status was not consistently recorded, but two sites (RVS Leicestershire and Age UK South Lakeland) recorded that over 60 per cent of service users lived in owner-occupied accommodation – a figure that is broadly in line with national averages (Office for National Statistics, 2013) – and that between 6 and 17 per cent of people referred were in sheltered or social housing (see Table E.1).

Table E.1: Housing status reported in two project sites

Housing status	RVS Leicestershire (N = 1,456)	Age UK South Lakeland (N = 554)
Owner-occupied	61%	70%
Rented	18%	11%
Sheltered/supported/social housing	6%	17%
Unknown	15%	1%

Where recorded, we observed that a relatively high proportion of services users lived alone. For example, 45 per cent of those referred to Age UK Oxfordshire, 46 per cent of those referred to Age UK South Lakeland and 75 per cent of those referred to the Leeds service were classified as ‘living alone’. Given that the projects aimed to target people whose isolation potentially puts them at risk, this was an interesting finding. However, the presence of someone else in the home did not necessarily mean that the older person was less at risk of isolation: projects told us of many cases where spouses, often old with chronic conditions themselves, were struggling to provide care.

Self-reported health and wellbeing

Some of the project sites recorded measures of self-reported health status. Potentially, such measures can be important to help our understanding of whether people might be deriving a benefit from the services – especially where data are collected from two time points so that changes in reported health or wellbeing can be measured.

Measures ranged from simple scales asking for a description of health as good, poor and so on, to more structured measurement scales that asked a series of specific questions.

Table E.2 gives an indication of the breakdown of responses from two project sites using broad descriptions of health status. These were derived from different questionnaires and are not strictly comparable. However, both show that not all respondents reported that their health was poor – although the proportion reporting poor health was higher than you would expect in general population surveys (Booker and Sacker, 2011), with around 30 per cent of RVS Leicestershire and Age UK South Lakeland referrals reporting poor health.

Table E.2: Self-reported health status of referrals to two project sites

Self-reported health status	RVS Leicestershire (N = 822)	Age UK South Lakeland (N = 551)
Excellent	1%	0%
Very good	3%	3%
Good	15%	23%
Fair	51%	44%
Poor	31%	30%

For a subset of users (n = 104), Age UK South Lakeland collected self-reported health status data at two time points: at first referral and then an average of six months later (see Table E.3). Over the six-month period, 35 people's self-reported health status improved, while for 21 people it got worse.

Table E.3: Self-reported health status in Age UK South Lakeland at two time periods (n = 104)

Initial health status	Subsequent health status (after referral)				All
	Very good	Good	Fair	Poor	
Very good		1			1.0%
Good	4	12	7	1	23.1%
Fair	3	15	25	12	52.9%
Poor		5	8	11	23.1%
All (%)	6.7%	31.7%	38.5%	23.1%	

In addition to simple questions on health status, there are a variety of more structured tools available such as the Adult Social Care Outcomes Toolkit (ASCOT) (Netten and others, 2011), which is used to look at social care outcomes, and the Warwick-Edinburgh Mental Well-being Scale (WEMWBS) (NHS Health Scotland, 2015). These use a series of specific questions, with responses weighted and combined to give an overall score.

As the projects were taking shape, although there was some awareness of ASCOT, project staff favoured WEMWBS and were more familiar with it. However, it was not always possible to use the tools systematically – staff reported that they did not feel that it was always appropriate to be asking questions, particularly if people were very unwell.

The Warwick-Edinburgh scale in its shorter form (SWEMWBS) was used in Age UK Oxfordshire (see Table E.4). The average score for people referred in Oxfordshire was 22, lower than the reported English average, which is around 23.6 (Warwick Medical School, 2011), although this could be due to the age profile of the small Oxfordshire cohort.

Table E.4: Short Warwick-Edinburgh Mental Well-being Scale scores collected by Age UK Oxfordshire at referral to scheme baseline

SWEMWBS score	Age UK Oxfordshire (N = 152)
0–9 (poor)	2%
10–14	5%
15–19	26%
20–24	38%
25–29	18%
30+ (good)	13%

Follow-up scores (taken at the end of the service) were reported for 29 service users. This is a small number, but of these, 24 showed an improved score (by an average of eight points) and four a worse score (by an average of four points), with one showing no change.

Age UK South Lakeland: Compass

The Age UK South Lakeland project developed its own comprehensive screening tool, called Compass, which asked a series of detailed questions about health, social and financial status. It also used reduced forms of a depression screening tool and an anxiety tool. An example of the kind of information collected, which was also used at two time points to measure change, is given in Table E.5. The tool was developed in order to target the project's services better.

Table E.5: Responses to the question 'How has your social life changed over the last three years?' in Age UK South Lakeland

'How has your social life changed over the last three years?'	Initial responses (N = 547)	Subsequent responses (after referral) (n = 105)
Increased	3.1%	17.1%
The same	19.6%	25.7%
Some reduction	28.9%	32.4%
Reduced significantly	48.4%	24.8%

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About the authors

Theo Georghiou joined the Nuffield Trust in 2008 as a Senior Researcher. His interests include predictive risk techniques, methodologies for the evaluation of complex care interventions, and end-of-life care services. Theo has extensive experience using large administrative datasets from primary and secondary health and social care services. In his previous role at The King's Fund he was part of the team that developed the Patients at Risk of Readmissions tool (used by commissioners to identify patients at high risk of an emergency readmission), and at the Trust he has extended these methods to make use of a wide range of data sources (including those from social care and GP systems). He has also been involved in the development of person-based resource allocation models, evaluations of a palliative care nursing service and studies of the use of health and social care at the end of life. Prior to his work at the Nuffield Trust and The King's Fund, Theo worked at the Healthcare Commission and the Commission for Health Improvement. He has a Master's degree in Experimental and Theoretical Physics from the University of Cambridge.

Cono Ariti joined the Nuffield Trust in July 2013 from the London School of Hygiene and Tropical Medicine (LSHTM) where he was a lecturer in Medical Statistics. His research interests while at the Trust included the evaluation of complex community interventions using large administrative datasets in areas such as telehealth and predictive risk modelling. Con left the Trust in 2015 and re-joined the faculty of LSHTM in May 2016 as an Assistant Professor of Medical Statistics. Con has an MSc in Medical Statistics from LSHTM and a first class honours degree in mathematics from Murdoch University in Western Australia.

Miranda Davies joined the Nuffield Trust in 2014. Her key interests include research methodology, research ethics and aspects of health in older age. Prior to her work at the Nuffield Trust, Miranda worked as a post-doctoral Research Fellow at Brunel University exploring health professionals' decision making. Miranda holds an undergraduate Psychology degree from the University of Plymouth, and an MSc in Health Psychology from London Metropolitan University. She is a Chartered Psychologist with a PhD in Health Sciences from Brunel University.

Sandeepa Arora is a Research Analyst and joined the Nuffield Trust in 2012. Before joining the Trust, she assisted in a research project at Healthcare Management Group, Imperial College London, on understanding people's willingness to pay for health care. The work involved estimating the trend in people's willingness to pay for health care and looked at people's attitudes towards risky behaviours. Sandeepa's research interests focus on the application of quantitative techniques in health care research and economic evaluation. Sandeepa has a Master's degree in Economics with an emphasis on health economics from the University of Edinburgh.

Tazeem Bhatia is a Specialty Registrar in Public Health and was previously a GP in Sussex. She joined the Nuffield Trust in January 2015. Her interests are health inequalities and health systems. During her public health career in the UK she has worked at the London School of Hygiene and Tropical Medicine on a Cochrane

systematic review looking at the effect of user fees on utilisation and access to health services; at Greenwich Local Authority improving cardiovascular disease outcomes, particularly for women; and at West Kent Primary Care Trust on a health equity audit for HIV. Tazeem is currently working at Guy's and St Thomas's NHS Foundation Trust with the Accountable Clinical Network for Cancer and integrating care for children and young people. Prior to joining the NHS Public Health training scheme, Tazeem worked for several years in overseas development, spending two years in Afghanistan on health system strengthening and trying to improve access to health care. She also spent four years in Myanmar working on health service provision to marginalised populations in the border areas and on increasing access to HIV services in Yangon. Tazeem has a MPhil in Public Health from the Humbolt University, Berlin, as well as medical degree and MRCP.

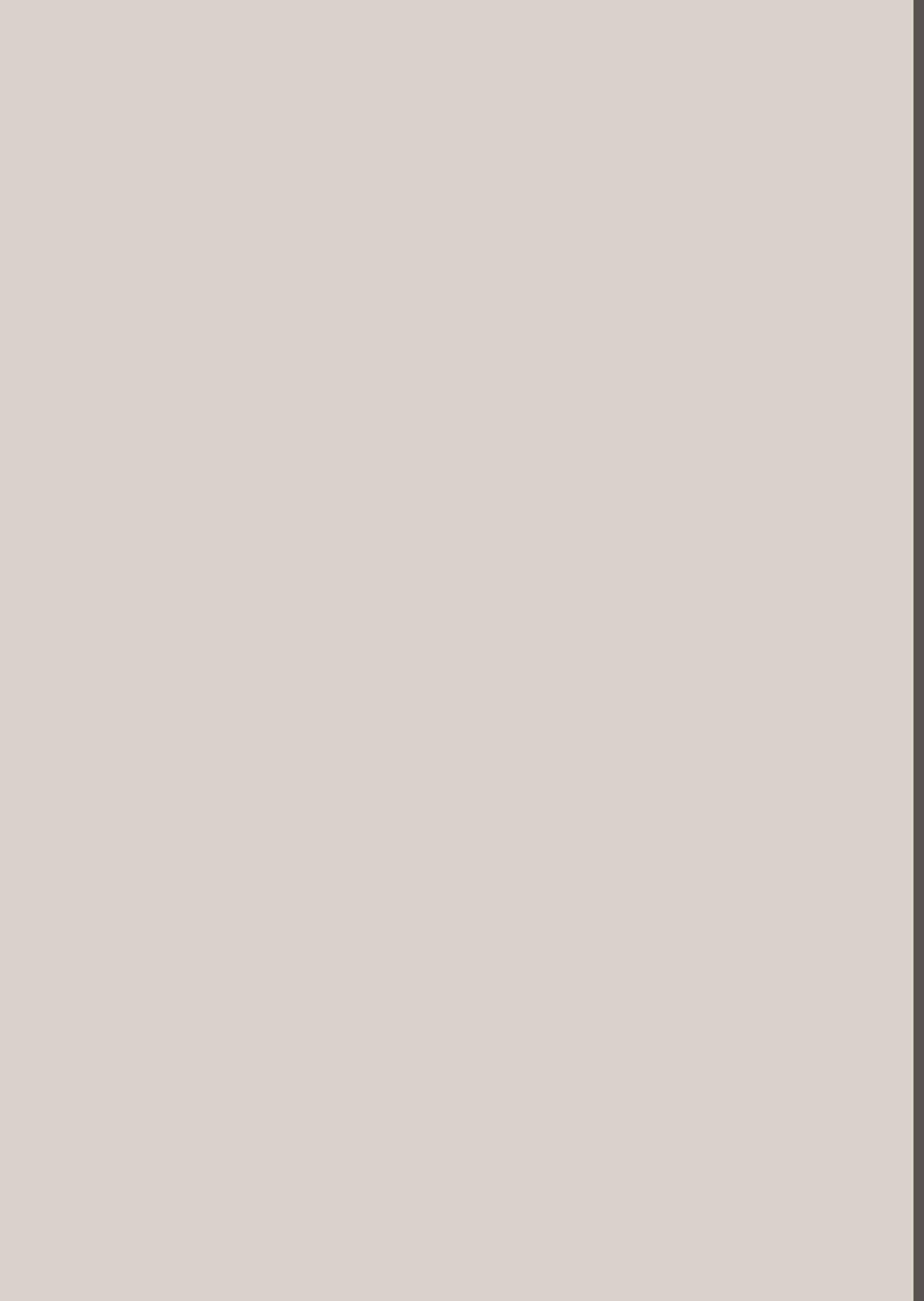
Martin Bardsley joined the Nuffield Trust in September 2008. Martin has over 20 years' experience in health services research and analysis and was formerly Director of Research at the Trust. Over seven years he led the Trust's research team in a series of innovative projects on applied health services research. He is currently working part time as a Senior Fellow supporting a range of projects as well as working as a Senior Fellow at The Health Foundation. He has previously worked in regulation at the Commission for Health Improvement before moving to the Healthcare Commission, where he led their work on new ways to use information to target regulatory activity. This included ground-breaking work on the use of multiple indicators and time series analyses for surveillance. Martin is a Fellow of the Faculty of Public Health and in the 1990s he established a London-wide resource on public health information. This work led to a number of reports on health in London, including the first Public Health Report for Greater London in 1998.

Prior to that, Martin had worked on the application of outcome measurement, which formed the basis of his PhD. He was also involved in early stages of the application of Diagnosis Related Groups (DRGs) in the UK – work that eventually led to Healthcare Resource Groups (HRGs) and Payment by Results (PbR).

Ruth Thorlby is the Deputy Director of Policy at the Nuffield Trust. Her research interests include NHS reform, GP commissioning, accountability, international comparisons and health inequalities. Before joining the Trust, Ruth was a Senior Fellow at The King's Fund, where her publications included two major reviews of NHS performance as well as a range of briefing and research papers.

She was a 2008–09 Harkness Fellow, based at Harvard Medical School, where she researched how physicians and health care organisations in the United States understood and tackled racial inequalities in the quality of health services.

Ruth has an MSc in Social Policy from the London School of Economics. Before moving into health policy research, Ruth was a broadcast journalist, working for the BBC World Service and BBC News and Current Affairs, including Panorama.



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